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THE

BRITISH HEMIPTERA.

VOL. I.

HEMIPTERA-HETEROPTERA.

39831

BY

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AND
JOHN SCOTT.

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PREFACE.

The object of the present volume is to furnish British entomologists with descriptions of the indigenous Hemiptera-Heteroptera. Hitherto only a few species have been described or figured by British authors, and to the consequent difficulty of naming their captures may probably be attributed the indifference with which this order of insects has been regarded by British collectors. The collections are few and imperfect, and either only in part or incorrectly named, the national collection in the British Museum being no exception.

On the Continent, on the contrary, the order has received great attention from eminent authors, and we have had to refer to their works for information; the latest, and those to which we are most indebted, being by Fieber and Flor.

Fieber's 'Europaischen Hemiptera,' published in 1861, containing descriptions of all the European species, is the condensed result of a lifetime of observation, and will ever remain a monument of methodised labour and the genius of the author. We fear, nevertheless, that the exigencies of the "Analytic Method" adopted have often led the author to exaggerate the importance of specific differences, and to create unnecessary genera. From some of his conclusions in this respect we have been compelled to dissent, and frequently, where we have adopted his genera, it has been rather from an intense dislike to add to the overburdened nomenclature by making new generic names for combinations of his genera, than from the conviction that they are necessary divisions. On the other hand,

it may be that the discovery of many new and allied species would show that his prescience had, in some instances, seized upon the requisite generic characters.

Flor's 'Rhynchoten Livlands,' published in 1860, is worked out in a masterly manner and with a philosophic conception, but from a different point of view to Fieber's work. Having more limited materials to deal with, the author has given more full and methodical descriptions; he has aimed at making as few genera as possible, and has, consequently, placed generic value so high that he has had to employ sub-genera, a device which, to say the least, is very cumbrous. To Flor belongs the credit of applying to the purpose of classification throughout the order the characters afforded by the structure of the abdomen, especially of the "genital segments."

The materials for the present work have been collected by us in the southern counties, chiefly in the vicinity of London, during four or five years of almost undivided attention to the order, and we are also indebted to the liberality of a few friends for species from a distance. When Hemiptera shall be collected over a larger area, with the assiduity devoted to Coleoptera and Lepidoptera, there cannot fail to be a large addition to the number of our known species.

The plan of the work is, first, the separation into *Divisions* and *Subdivisions* (pp. 10, 11). The *Subdivisions* are assorted into *Sections*, and these again into *Families*, comprising the leading points of the genera therein denoted (pp. 11—50). Then follow the *Genera* and *Species* (pp. 51—617); the Section and Family to which they belong being indicated by the heading of the pages. All the descriptions (with the very few exceptions mentioned *in loco*) have been made from actual specimens. The synonymy has been rendered as full as is consistent with accuracy, the preference always given to the oldest name, and doubtful citations and references to mere lists omitted. The localities given are those of which we are certain, but many of the species doubtless exist elsewhere. The

terms "common," "rare," &c. have reference chiefly to the southern counties of England. The time of appearance is given where it is known.

The list of "Reputed British Species" contains the names of such as have been quoted as indigenous by various authors, but of which we have seen no authentic examples. Some of the species may possibly hereafter prove to be British, but the names of others appear to have been introduced in error.

Our best thanks are given to Dr. Fieber for the invaluable assistance he has rendered in the determination of doubtful species, and for the great courtesy and readiness with which he has devoted much time and trouble to the difficult points submitted to him. We also express our obligations and return thanks to all those gentlemen who have assisted us by the loan of books and the loan and gift of specimens, for without their help this work could not have been accomplished. We shall be rewarded for our labour if we find that it induces collectors to acquire and study the neglected British Hemiptera.

The plates illustrating the general structure and the genera have been engraved by Mr. E. W. Robinson, in his usual artistic style, and require no commendation.

We hope hereafter to produce a volume on the British Hemiptera-Homoptera.

LEE; *June 23rd*, 1865.

EXPLANATION OF THE ABBREVIATIONS USED.

Ahrens, Faun. Ins. Eur.—*Ahrens*, Fauna Insectorum Europæ.
Am. et Serv., Hém.—*Amyot et Serville*, Hémiptères.

Bärens, Berl. Ent. Zeits.—*Bärensprung*, in Berliner entomologische Zeitschrift.
Bohem. Gott. Ins. Fauna.—*Boheman*, Gottland's Insecta Fauna, in Kongl. Vetenskaps-Academiens Handlingar.
„ Nya Svenska, or Vet. Akad. Förh.—*Boheman*, Nya Svenska Hemiptera, in Oefversigt af Kongl. Vetenskaps-Academiens Förhandlingar.
Blanch., Hist. Nat.—*Blanchard*, Histoire naturelle des Insectes.
Burm., Handb.—*Burmeister*, Handbuch der Entomologie.
Bur., Ent. Trans.—*Burrell*, in the Entomological Transactions.

Coqb., Ill.—*Coquebert*, Illustrata Iconographica Insectorum.
Costa, Ann. Soc. Ent. Fr.—*A. Costa*, in Annales de la Société entomologique de France.
„ Atti.—*Costa*, Atti del Reale instituto d'incorrag. alle Sc. nat. di Napoli.
„ Cent.—*Costa*, Cimicum Regni Neapolitani Centuriæ.
„ Corr. Zool.—*Costa*, Correspondenza Zoologica.
Curt., B. E.—*Curtis*, British Entomology.
„ Ent. Mag.—*Curtis*, in Entomological Magazine.
„ Trans. Ent. Soc.—*Curtis*, in Transactions of the Entomological Society of London.

Dahlb., Vet. Akad. Handl.—*Dahlbom*, in Vetenskaps-Akademiens Handlingar.
Dall., Cat. Hem.—*Dallas*, Catalogue of Hemiptera in the British Museum.
„ Trans. Ent. Soc.—*Dallas*, in Transactions of the entomological Society of London.
De G., Mém.—*De Geer*, Mémoires pour servir à l'histoire des Insectes.
Dohrn, Stett. Ent. Zeit.—*A. Dohrn*, in Stettiner entomologische Zeitung.
Don., Brit. Ins.—*Donovan*, British Insects.
Doug. & Scott, Ent. Ann.—*Douglas and Scott*, in the Entomologists' Annual.

Fab., E. S.—*Fabricius*, Entomologia Systematica.
„ Mantiss.—*Fabricius*, Mantissa Insectorum.
„ Sp. Ins.—*Fabricius*, Species Insectorum.
„ S. R.—*Fabricius*, Systema Rhyngotorum.
Fall., Mon. Cim.—*Fallén*, Monographia Cimicum.
„ Hem. Suec.—*Fallén*, Hemiptera Succica.
Fieb., Weit. Beitr.—*Fieber*, in Weitenweber Beiträge zu Nat. und Heilkunde.
„ Ent. Mon.—*Fieber*, Entomologische Monographien.
„ Europ. Hem.—*Fieber*, Europaischen Hemiptera.
„ Gen. Hydroc.—*Fieber*, Genera Hydrocoridum.
„ Rhyn.—*Fieber*, Rhyncotographien.
„ Spec. Coris.—*Fieber*, Species Corisarum.
„ Syn. Coris.—*Fieber*, Synopse der europ. Arten Corisa, in Bulletin de la Société Impériale des Naturalistes de Moscou.
„ Wien. Ent. Monats.—*Fieber*, in Wiener entomologische Monatsschrift.
Flor, Rhyn. Liv.—*Flor*, Rhynchoten Livlands.
Fuss, Mitth. d. Ver. Herm.—*Fuss*, Mittheilungen der Verein zu Hermannstadt.

Geoffr. Ins.—*Geoffroy, E. L.*, Histoire des Insectes.
Germ., Zeits.—*Germar's* Zeitschrift für Entomologie.
„ Faun. Ins. Eur., or F. E.—*Germar and Ahrens*, Fauna Insectorum Europæ.
„ Reis. Dalm.—*Germar*, Reise in Dalmatien.
Gorski, Anal.—*Gorski*, Analecta ad entomographiam provinciarum Imperii Russici.
Guér. Ic.—*Guérin Mneville*, Icones du Règne animal de Cuvier.

Hahn, Icon.—*Hahn*, Icones ad monographiam Cimicum.
„ Wanz.—*Hahn*, Wanzeninsecten.
Halid., N. Hist. Rev.—*Haliday*, in the Natural History Review.
Harris, Exp. Eng. Ins.—*Harris*, Exposition of English Insects.
H. Schf., Nom. Ent.—*Herrich-Schäffer*, Nomenclator Entomologicus.
„ Panz F. G.—*Herrich-Schäffer's* continuation of Panzer's Fauna Germanica.
„ Wanz.—*Herrich-Schäffer's* continuation of Hahn's Wanzeninsecten.

Jenyns, An. N. H.—*Jenyns*, in Annals of Natural History.

Kirschb., Caps.—*Kirschbaum*, Rhynchoten der Gegend von Wiesbaden.
Kolen., Mel. Ent.—*Kolenati*, Meletemata Entomologica.
Küst., Stett. Ent. Zeit.—*Küster*, in Stettiner entomologische Zeitung.

Lam., Hist. Nat.—*Lamarck*, Histoire naturelle des animaux sans vertèbres.
Lap., Hém.—*Laporte*, Essai d'une classification systematique de l'ordre Hémiptères.
Lat., Gen.—*Latreille*, Genera Crustaceorum et Insectorum.
„ Hist.—*Latreille*, Histoire naturelle des Crustaces et Insectes.

L. Duf., Rech.—*Léon Dufour*, Recherches sur les Hémiptères.
Leach, Trans. Lin. Soc.—*Leach*, in Transactions of the Linnean Society.
Le P. et Serv., Enc.—*Le Pelletier et Serville*, Encyclopédie Méthodique.
Lin., F. S.—*Linné*, Fauna Succica.
„ S. N.—*Linné*, Systema Naturæ.

Märkel, Germ. Zeits.—*Märkel*, in Germar's Zeitschrift.
Meyer, Caps.—*Meyer Dür*, Verzeichniss der Schweizer Rhynchoten, *Capsini*.
„ Stett. Ent. Zeit.—*Meyer Dur*, in Stettiner entomologische Zeitung.
Muls., An. Soc. Lin.—*Mulsant*, in Annales de la Société Linnéenne de Lyon.

Newm., Ent. Mag.—*Newman*, in Entomological Magazine.

Oliv., Enc.—*Olivier*, in Encyclopédie Méthodique.

Panz., F. G.—*Panzer*, Fauna Germanica.
Perris, An. Soc. Lin.—*Perris*, in Annales de la Société Linnéenne de Lyons.

Ramb., Faun. And.—*Rambur*, Fauna Andalusiæ.
Rossi, F. E.—*Rossi*, Fauna Etrusca.

Schell., Geschl.—*Schellenberg*, Helvetisches Wanzengeschlect.
Say, Amer. Ent.—*Say*, American Entomology.
Sahlb., Geoc. Fen.—*Sahlberg*, Geocorisa Fennica.
Schill., Arb. u. Veränd.—*Schilling*, in Arbeiten und Veränderungen der Schlesischen Gesellschaft für vaterlandische Cultur.
„ Beitr.—*Schilling*, Beiträge zur Entomologie.
Scholtz, Arb. u. Verand.—*Scholtz*, in Arbeiten und Veränderungen der schles. Gesellschaft für vaterl. Cultur.
Schrk., Enum. Ins. Aust.—*Schrank*, Enumeratio Insectorum Austriæ indigenorum.
„ F. B.—*Schrank*, Fauna Boica.
Schum., Beitr.—*Schummel*, in Beiträge zur Entomologie besonders in Bezug auf Schlesien.
Scop., Ent. Carn.—*Scopoli*, Entomologica Carniolica.
Scott, Ent. Ann.—*Scott*, in the Entomologists' Annual.
Sign., Ann. Soc. Ent. France.—*Signoret*, in Annales de la Société entomologique de France.
Spin., Hem.—*Spinola*, Essai sur les insectes Hémiptères.
Stål, Vet. Akad. Förh.—*Stål*, in Oefversigt af Kongl. Vetenskaps-Akademiens Förhandlingar.
Stein, Berl. Ent. Zeits.—*Stein*, Berliner entomologische Zeitschrift.

Villers, L. E.—*Villers*, Linnæi Entomologia.

Walleng., Oefv.—*Wallengren*, in Oefversigt af Kongl. Vetenskaps-Akademiens Förhandlingar.

Westw., An. Soc. Ent. France.—*Westwood*, in Annales de la Société entomologique de France.

„ Int. Mod. Classif.—*Westwood*, Introduction to the Modern Classification of Insects.

„ Mag. Nat. Hist.—*Westwood*, in the Magazine of Natural History.

White, Mag. Nat. Hist.—*A. White*, in the Magazine of Natural History.

Wolff, Ic. Cim.—*Wolff*, Icones Cimicum.

Zett., Act. Holm.—*Zetterstedt*, Acta Holmiæ.

„ Faun. Ins. Lap.—*Zetterstedt*, Fauna Insectorum Lapponica.

„ Ins. Lap.—*Zetterstedt*, Insecta Lapponica.

♂—Male.

♀—Female.

INTRODUCTION.

STRUCTURE.

In the insects composing the Sub-order *Heteroptera* the body consists normally of 13 segments, of which the 1st is the *Head*; the 2nd, 3rd, and 4th are united to form the *Thorax*; and the remaining 9 are joined together to form the *Abdomen*. In the latter portion some of the segments often become so amalgamated with or covered by others as not to be distinguishable. The following concise account of the principal parts of the external anatomy is given in explanation of the terms used in the descriptions of the insects; for the minute and internal anatomy and the physiology, which do not come within the scope of this book, we must refer to the works of Kirby and Spence, Léon-Dufour, Burmeister, Amyot and Serville, Kolenati, Fieber, Flor, &c.

The *Head*.—On the upper surface of the head the portion before the eyes is the *Face*, and the posterior portion is the *Crown*. The *Face* is divided by two longitudinal lines (sometimes deeply impressed) into three parts or lobes, which vary in their relative proportions; sometimes the *Crown* is distinctly produced in front over the face, and this prolongation is the *Clypeus*. On the crown are 2 simple *Ocelli* (sometimes wanting). On the side-margins of the head are 2 immovable, compound *Eyes*. Before the eyes, sometimes

on the lower surface of the head, are inserted 2 *Antennæ* of 3, 4, or 5 joints. The under side of the head is the *Gula*, the sides, anteriorly, are the *Cheeks* (*genæ*). In front of the head beneath is inserted the exterior suctorial mouth called the *Rostrum;* it is an extension of the *labium*, consisting of 3 or 4 joints; the sides are curved upwards, and are united at the edges to form a sheath; at the base, on the upper side, the *labrum* is more or less produced, and closely appressed. Inside lie the representatives of the mandibles and maxillæ, in the form of 4 setæ; the maxillary and labial palpi are obsolete. The junction of the rostrum with the head is more or less flexible, and so permits the extension of the organ when in use, or its retraction under the body when in repose.

The *Thorax*.—Of the three thoracic segments the 1st is the *Prothorax*, of which the upper side is developed into the large plate adjoining the head, called the *Pronotum*. The lower side, to which is attached the 1st pair of legs, is the *Prosternum*. The 2nd segment is the *Mesothorax:* the upper side is the *Mesonotum*, developed posteriorly into the triangular plate which lies between the elytra, or sometimes covers them, called the *Scutellum;* to the lower side, or *Mesosternum*, is attached the second pair of legs; and to the sides are attached the *Elytra*. The 3rd segment is the *Metathorax;* the upper side or *Metanotum* is very short; the lower side (*Metasternum*) is longer, and bears the 3rd pair of legs; here also, on each side, anteriorly, near the coxa, is the orifice of the internal *sac*, containing the matter which gives to so many of the Hemiptera their disagreeable odour. To the sides of this segment are attached the *Wings*. The under side of the 3 thoracic segments, taken together, is called the *Sternum*. The prolongation of the middle of the posterior margin of the segments of the sternum is the *Xyphus*.

The *Elytra* or wing-covers (*Hemielytra* of authors) are usually of two different textures, the basal part being of a firm or leathery consistence, and the apical part delicate and membranous. Each *elytron*, taken as a whole, has its base, anterior (or outer), inner, and posterior margins, its surface being the disk, and the relative parts of each subdivision of the elytron, have the same appellations. The basal

portion is composed of 2 pieces joined together at their sides; one narrow, adjoining the *Scutellum*, is distinguished as the *Clavus*; the other, broad, as the *Corium*. In 2 sections (*Capsina* and *Anthocorina*) the *Corium* is prolonged into a triangular piece (*Cuneus*), which is at once joined to and separated from the *Corium* by a flexible suture. The junction of the *Corium* and *Clavus* is the *Clayal suture*, and the junction of the *Corium* and *Membrane* is the *Membrane-suture*. The apical portion of the *elytron* is the *Membrane*, the inner portion of which on one elytron overlaps the corresponding portion on the other elytron when the insect is in repose.

Both *Corium* and *Membrane* are furnished with nerves.* In the *Corium* are at least 2 principal longitudinal nerves, and sometimes 1 within the anterior margin separates a narrow portion, forming the *Embolium*. In the *Membrane* the number and position of the nerves vary greatly, often even in closely allied genera.

In some cases the nerves become obsolete, sometimes the *Membrane* is wholly or partly wanting, and, more rarely, the *Clavus* or *Corium* is but partially developed.

The *Wings* are of a delicate membranous structure, furnished with nerves, and fold up under the *Elytra* when in repose. In some cases the *Wings* are not developed.

The *Legs* differ much in the several Sections, with respect to length, breadth, and form; but they are always composed of 5 parts articulated together—the basal piece or *Coxa*, the *Fulcrum*, the *Thigh*, the *Tibia*, and the *Tarsus*. The latter consists at most of 3 joints, the terminal one being furnished with 1 or 2 claws, between which are often 2 small membranous appendages or *Pulvilli*.

The *Abdomen*.—Flor, in his 'Rhynchoten Livlands' has laid much stress on the structure of the abdomen as affording characters for classification, describing it with great detail, and we cannot do better than transfer the following portion of his description to our pages.

* Called also veins, nervures and ribs, by various authors. None of these terms are correct, in the sense in which they are used in the anatomy of the higher animals, but as Flor well observes, no one thinks in their application to insects, of their primitive meaning.

" The abdomen of the *Rhynchota*, in its greatest development, consists of nine segments placed one after another, of which only the first 6 are proper abdominal segments, the last 3 (of which the 1st and 2nd are often entirely wanting) differ in form, more or less, from the others and subserve the functions of the sexual organs. In every case, therefore, for the sake of analogy, I call only the first six, *Abdominal-segments*, and the following ones, *Genital-segments*. In the male in some families (*Anthocoridæ*, *Capsina*,) we find, apparently, seven abdominal segments, as the first genital segment retains entirely the form of an abdominal segment. In the female of the *Lygæodæ*, some of the *Coreodæ* (*Coreus*, *Pseudophlœus*, *Syromastes*), and *Aradus*, the 6th abdominal segment on the underside participates in the sexual functions, in like manner as the following genital segments; thus in the middle it is sometimes entire, sometimes cleft almost up to the anterior margin, in such a manner that the edges of the cleft touch or overlap each other. Often in the female, mostly in those instances where the ovipositor is largely developed, the last 3 abdominal segments (in the *Lygæodæ* the fourth and fifth) are broadly raised up and in the middle concealed under the foregoing segments, so that they can only be distinguished at the sides. In the male on the contrary the last 3 abdominal segments, in the middle, on the underside, are not hidden under the foregoing segments, but are visible. In counting the abdominal segments, we must observe, that viewed from beneath (in ♂ and ♀) it is generally, nearly, or quite impossible to see the first of them, since it is shorter than the other segments, and partly concealed, the front being covered by the posterior margin of the metasternum and the hinder coxæ, and the hinder side anchylosed with the second segment. Nevertheless, in such cases, when the wings are removed, the separateness of the segment is always clearly perceptible on the upper side, so that we can count six abdominal segments on the upper side and only five beneath. Consequently in the male there are all the six abdominal segments, and in the female always the first five at least, and mostly also the sixth, exclusive of the genital segments.

" Following the abdominal are the *genital segments*, in their

greatest development three in number. On the upper side they are either invisible, or at most one or two (and then always the last one or two) can be seen; generally also on the underside only one or two are visible. In form they are sometimes very like the last abdominal segment, (occasionally the first genital segment is exactly similar as in the before-mentioned Families, *Capsina*, *Anthocoridæ*, &c.), and they then appear as half or entire segments; but sometimes they are very dissimilar, and then they appear as distinct plates, but only visible on the underside."

The lateral margin of the abdominal segments is much developed in several sections, and forms a flat, reflexed or vertical border to the abdomen which is called the *Connexivum*.

The *Stigmata*, or apertures by which air is admitted into the body, are situated below the margins on each side of the under surface of the body, viz., 1 between the *pro-* and *mesosternum*, 1 between the *meso-* and *metasternum*, and 1 on each of the 6 abdominal segments. There is also often a pair on the 2nd genital segment in the ♀, or on the 1st genital segment in the ♂, where it assumes the form of an abdominal segment. In *Nepa* the stigmata are wanting on all the segments except the last.

NATURAL HISTORY.

It is probably in consequence of the fact that the Hemiptera-Heteroptera are in all stages of their existence active and suctorial, and the consequent difficulty of supplying them, in confinement, with fresh, appropriate food, that but few observations upon their natural history have been made or recorded. There is a gradual development of the creature after it leaves the egg, not only in size but in the perfection of its organs. The larva resembles the imago and is said to cast its skin 3 times before it reaches the pupa state; then the insect is still more like the imago, but some of its parts, such as the *ocelli*, wings and claws are either rudimentary, or are barely indicated, and only become perfected after the last moult. But

whether each species casts its skin the same number of times; how long the individuals of each species remain as larva, pupa, or imago; what species have more than 1 brood in a year, and what constitutes the food of each species, are matters that, in the great majority of instances, remain to be determined. There is therefore a wide field for research in the natural history of this sub-order of insects.

COLLECTING.

The perfect insects are chiefly to be found during the summer; but some (mostly those which hybernate) may be taken in autumn, winter, and spring: many species are very local. In summer some inhabit trees, bushes, or herbaceous plants, feeding on their sap or on other insects; these may be captured by beating the branches over a large net or umbrella, or by sweeping with the sweeping net. Many species are to be found on the ground under the leaves or about the stems of various plants, especially in sandy places, each species being usually attached to a particular kind of plant. A few species live under the bark of dead trees and timber. Some species are attached to the margins of ponds and rivers, and to the sea-shore; some live in water, or glide along its surface, requiring the water net for their capture. As a general rule the instruments of capture used by the Coleopterist will be those wanted by the Hemipterist. Many species are very active, both with their legs and wings, and must be secured directly they are in the net. After trying several methods of doing this, we have found the following to be the best. Take a glass phial about three inches long and having a wide mouth; into this put a cork, through the centre of which fit a large quill, in such a manner that one end of it, cut off straight, projects a little beyond the cork inside the phial, the other end, cut obliquely and fitted with a wooden stopper, projecting $1\frac{1}{2}$ inch on the outside. Into the phial put quickly a *single* young laurel leaf cut previously into fine shreds, on the top of these place tightly a piece of unsized paper (that imported with tea is the best) and then fill up the bottle

loosely with 2 or 3 pieces of the same kind of paper, taking care that the paper touches the glass all round. The hydrocyanic acid from the laurel renders the insects motionless immediately, the paper absorbs any excess of moisture and remains damp, and the insects lie unhurt among its folds, but they should be set out within a day or two. The insects, being for the most part of delicate and fragile structure, should never be touched by the fingers; the greater number will pass readily through the quill when it is placed above them, or the cork may be withdrawn and the mouth of the phial placed over those of large size. The advantage of not touching with the hand will also be found in the case of those species that give out a disagreeable odour; this odour, we may remark by the way, disappears after death.

In the autumn, winter, and spring *Hemiptera* may be found about the roots of plants, in tufts of grass, and in moss, among dead leaves and the *débris* of hay ricks and corn-stacks, and in field rubbish. These may be brought home in the collecting-bottle among paper without laurel; and may be killed like *Coleoptera* by being plunged into hot (not boiling) water.

PRESERVING.

The best method of preserving *Hemiptera* is to fix them on stout card by means of gum tragacanth reduced to the consistence of paste by means either of dilute acetic acid, or of water in which a little oxalic acid or corrosive sublimate has been dissolved. Turn the insects out of the phial on to a piece of white blotting paper, sort them into species, lay the specimens on their backs, if requisite put out their legs and antennæ with a camel's hair brush, and then turn them over. Cut the card into strips wider than the length of the insects, pin one strip to a piece of thin cork and cover rather thickly with the gum as much space as will suffice for one insect, lift the specimen by means of a wetted brush on to the gummed card, and place its legs and antennæ *quickly* into their natural position, taking care not

to force them, and to lift the antennæ from the base. The whole under surface of the insect including the legs and antennæ should rest upon the card, for if it do not, some parts will soon get broken off. The insects should be arranged side by side, ♂ and ♀, and an example of each sex exhibited with the under side turned up. The specimens may be afterwards separated by cutting through the card with sharp scissors, or they may remain together; but in any case the card should be marked on the under side with the locality and date of capture. Care should be taken to preserve the specimens from the attacks of mites, which are especially fond of them whilst drying, often devouring the antennæ in a single night: a piece of camphor kept in the drying box will accomplish this. Not till the insects are quite dry should they be placed in the cabinet, and if they then become greasy, they may be restored to their beauty by immersion in benzine.

BRITISH HEMIPTERA.

Order.—HEMIPTERA, *Lin., Zett.*

Rhyngota, *Fab.*
Rhynchota, *Burm., Flor, Fieb.*

Sub-Order 1.—HEMIPTERA-HETEROPTERA, *Lat.*

Hemiptera-Frontirostria, *Zett.*
Rhynchota-Frontirostria, *Flor.*
Rhynchota-Heteroptera, *Fieb.*
Heteroptera, *Westw.*

Wings 4, the *anterior* pair posteriorly overlapping each other, the basal portion coriaceous, the apical (sometimes wanting) membranous; *posterior* wings (sometimes wanting) membranous.

Antennæ 3 to 5-jointed.

Mouth suctorial, consisting of a rostrum of from 3 to 4 joints, containing within it 4 setæ, and inserted at the anterior and inferior portion of the head.

Metamorphosis incomplete. **Div. 1.—GYMNOCERATA. 2.—CRYPTOCERATA.**

Sub-Order 2.—HEMIPTERA-HOMOPTERA, *Lat.**

Hemiptera-Gulærostria, *Zett.*
Rhynchota-Gulærostria, *Flor.*
Rhynchota-Homoptera, *Fieb.*
Homoptera, *McLeay, Westw.*
Cicadaria, *Fieb.*

Wings 4 (sometimes wanting), all membranous, the anterior pair not overlapping each other.

Antennæ generally short, and setiform.

Mouth suctorial (rarely wanting), consisting of a rostrum of 3 or 4 joints, containing within it 4 setæ, and inserted at the posterior and inferior portion of the head.

Metamorphosis incomplete.

Sub-Order 1.—HEMIPTERA-HETEROPTERA, *Lat.*

Div. 1.—GYMNOCERATA, *Fieb., Flor.*

Cimex, *Lin.*
Cimicides, *Fall., Zett., Lat.*
Geocorisæ, *Lat., Am. et Serv.*
Geocores, *Burm.*
Aurocorisa, *Westw.*

Antennæ 3—4-jointed, mostly inserted on the upper side of the head, or 5-jointed when inserted on the under side. Legs pedestrial, cursorial, or saltatorial, not natatorial.

Sub-Div. 1.—GEODROMICA, *Fieb., Flor.*

Geocores, *Auct.*

Elytra formed of several pieces joined together, or reticulated. Claws inserted at the *end* of the last joint of the tarsi.

* Not included in this volume.

Sub.-Div. 2.—Hydrodromica, *Fieb., Flor.*

Amphibicorisæ, *Lat., Duf.*

Elytra formed of one piece. Legs formed for running or leaping on the surface of water. Claws inserted *before* the end of the last joint of the tarsi (except in the genus *Limnobates*).

Div. 2.—CRYPTOCERATA, *Fieb., Flor.*

Hydrocorides and Naucorides, *Fall.*

Hydrocorisa, *Lat., Zett., Westw.*

Antennæ 3—4-jointed, very short, and concealed in cavities beneath the eyes. Legs natatorial.

Sub-Div. 1.—Litoralia, *Fieb.*

Ocelli 2. Rostrum 4-jointed. Antennæ 4-jointed, simple. Tarsi 3-jointed. (Wanting in Britain.)

Sub-Div. 2.—Aquatilia, *Fieb.*

Ocelli 0. Antennæ 3—4-jointed, simple, or with a side process on the middle joint. Tarsi 1—3-jointed, differing on 2 or 3 pairs of legs.

Div. 1.—GYMNOCERATA.

Sub-Div. 1.—Geodromica.

Section 1.—*SCUTATINA.*

Scutati, *Burm.*
Scutata, *Dall., Flor.*
Longiscuti, *Am. et Serv.*
Scutelleridæ, *Westw.*
Cydnidæ, Tetyræ, Macropeltidæ, *Fieb.*

Structure robust, convex. *Head* more or less deflected; lateral margins sharply defined. *Rostrum* 4-jointed, base in a channel on the under side of the head; *labrum* long, narrow, transversely wrinkled. *Antennæ* 3—5-jointed (in British species always 5-

jointed), inserted on a tubercle below the margin of the head, and which is rarely visible from above; first, fourth, and fifth joints more or less distinctly petiolated. *Ocelli* 2, seldom wanting. *Pronotum* large, quadrangular or hexagonal.* In the *membrane* of the *elytra* mostly more than five nerves. *Tarsi* 2—3-jointed; between the two claws on the last joint two membranous lobes or pulvilli.

Abdomen.—In both sexes the six abdominal segments are always visible, and none of them take the form of genital segments. On the under side the posterior margin of each segment is more or less concave, the sixth being still more cut out, roundly or somewhat squarely, for the reception of the genital segments. *Genital segments.*—In the ♂, as a rule, only the third segment is visible; it is usually convex, channeled, and rounded posteriorly; or it has only a slight depression; or there is a wide opening, with strong processes. In the ♀, on the upper side, the third segment is visible, more rarely the posterior margin of the second. On the under side the first segment appears as two triangular plates, with their inner margins shut close together; the second segment appears as two small, triangular plates, whose inner angles are distant from each other; the third segment as two triangular or irregularly oblong plates, which lie behind the first plate and go up between the first and second, either touching each other on their inner angles or sides or lying wide apart; the other plates sometimes visible in the centre belong to the anal or genital organs.

Family 1.—CYDNIDÆ.

Head small, short, rounded. *Rostrum* reaching to the middle coxæ, rostral channel short. *Antennæ* short or moderate. *Eyes* small, not prominent. *Pronotum* quadrangular, transverse. *Scutellum* triangular, long, the apex depressed. *Prosternum* with a rostral channel. *Mesosternum* with a slight keel. *Legs* strong; *tibiæ* with strong spines in rows; *tarsi* trimerous.

Abdomen.—Genital segments: in the ♀ the plates of the first are not ridged at their junction in the centre, and the parallel inner margins of the triangular plates of the third segment do not meet. Gen. 1, *Sehirus*.

These and other terms indicative of form are only approximative, none of the figures being mathematically regular. In the hexagonal form of *pronotum* the part adjoining the head is the *anterior margin;* joined to this are the divergent *sides;* from the lower end of these proceed the convergent *hinder sides*, the sixth side being formed by the posterior margin.

Family 2.—ODONTOSCELIDÆ.

Head broad, short, rounded. *Rostrum* reaching to the second or third pair of coxæ; rostral channel narrow in front, oval behind. *Antennæ* short. *Eyes* small, subreniform, or moderate and rounded. *Pronotum* quadrangular, transverse, or nearly 6-sided. *Scutellum* as long or nearly as long as the abdomen, and nearly as broad. *Prosternum* with a deep rostral channel, which is sometimes continued on the meso- and metasternum, and recurved, forming a channel for the antennæ when at rest. *Legs* short, strong; *tibiæ* with fine, short spines; *tarsi* trimerous.

Abdomen.—Genital segments as in the Family *Cydnidæ*, except that in the ♀, the junction of the plates of the first segment is ridged. Gen. 1, *Corimelæna*.

In the ♀ the angles of the first and second segments meet, and the plates of the third segment press close together, closing the anal aperture. Gen. 2, *Odontoscelis*.

Family 3.—SCIOCORIDÆ.

Head semi-ovate, broad, flat, the sides thin. *Rostrum* long, slender, wide beyond the base; rostral channel a little produced on the sides. *Antennæ* rather short, slender. *Eyes* small, rounded, prominent. *Pronotum* quadrangular, transverse, the sides produced, foliaceous. *Scutellum* more than half the length of the abdomen, broad at the base; apex narrower, but broadly rounded. *Sternum* with a rostral channel. *Legs* short, strong; *tibiæ* with the outer side flat, the margins dentate; *tarsi* trimerous.

Abdomen.—Connexivum broad, horizontal. *Genital segments:* in the ♂ the single segment is convex, with an oblique ridge at the sides; in the ♀, as in the Family *Pentatomidæ*, with this difference, that the plates of the third segment are very small and short, are far removed from each other, and do not reach the posterior margin of the second segment. Gen. 1, *Sciocoris*.

Family 4.—EURYGASTRIDÆ.

Head triangular, rounded in front, broad, convex. *Rostrum* reaching to the third pair of coxæ; rostral channel hindwardly very wide, with the sides produced. *Antennæ* very slender. *Eyes* small, triangular. *Pronotum* very convex, hexagonal; hinder sides short, hinder angles

much rounded. *Scutellum* convex, as long as the abdomen and nearly as broad, the sides parallel, the end broadly rounded. *Sternum* with a deep rostral channel: *Prosternum* in front divided and produced on each side of the rostrum into a rounded, recurved plate, which projects beyond the head, forming a channel for the antennæ when at rest. *Legs* short, strong; *tibiæ* angulated, the upper margins dentate; *tarsi* trimerous.

Abdomen.—Connexivum broad, rounded. *Genital segments:* in the ♂ the single segment, beneath, is oblique and somewhat concave; in the ♀ the segments are like those in the genus *Acanthosoma, i. e.*, the first and second, long and transverse, lie above each other; the third is narrow in the middle, wide at the sides, with the posterior margin slightly notched, thence gradually diverging on each side to the posterior angle which is obtuse. Gen. 1, *Eurygaster*.

Family 5.—ÆLIIDÆ.

Head elongate, curved. *Rostrum* long, thin; rostral channel deep, wide in front, sides much produced. *Antennæ* slender; tubercle small, pointing obliquely inwards. *Eyes* small, but prominent. *Pronotum* hexangular; hinder sides short, much rounded. *Corium* with the posterior margin rounded. *Sternum* with a rostral channel: *Prosternum* divided in the centre, the anterior margin of each half produced into a thin plate, projecting beyond the base of the head, forming a channel for the antennæ when at rest. *Tibiæ* outwardly flattened; *tarsi* trimerous.

Abdomen.—Connexivum narrow. *Genital segments:* in the ♂ almost vertical, in the centre convex, sides concave, posterior margin deeply or slightly notched; in the ♀ the first segment wide but short, convex; the posterior margins sinuate on each side; the second segment appears as two widely parted, long, narrow, obtuse lobes, reaching to the end of the abdomen; the third segment forms on each side of the second, a subtriangular, convex plate. Gen. 1, *Ælia*; 2, *Æliodes*.

Family 6.—PODOPIDÆ.

Head small, subquadrangular. *Rostrum* long, slender; rostral channel with the sides produced. *Antennæ* short, the outer side of the tubercle produced into a short, obtuse spine. *Eyes* large, very prominent. *Pronotum* hexagonal, at the anterior angles a large process, hinder angles dentate. *Scutellum* nearly as long as the abdo-

men, very wide throughout, sides parallel, end broadly rounded. *Sternum* without rostral channel, only widely depressed in the centre. *Legs* short; *tibiæ:* first pair angulated; *tarsi* trimerous.

Abdomen.—Connexivum narrow. *Genital segments:* in the ♂, the first segment vertical, hindwardly, at each side, with a broad, sinuate process, projecting beyond the base, curving inwardly, but not meeting in the centre. In the ♀, the first segment is short; the second forms two long, widely separated, triangular plates; the third is triangular, filling the space between the plates of the second segment, and hindwardly projecting beyond them, the posterior margin rounded. Gen. 1. *Podops.*

Family 7.—PENTATOMIDÆ.

Head quadrangular, semi-elliptic, or subtrapezoidal. *Rostrum* reaching at least to the second pair of coxæ, generally slender, sometimes stout at the base; rostral channel shallow. *Antennæ* slender, short or long. *Pronotum* hexangular, hinder angles sometimes much produced. *Scutellum* subtriangular, broad, generally constricted beyond the middle. *Sternum* without, or only with a shallow, rostral channel: *Mesosternum* mostly with a slight keel. *Legs* unarmed; *tibiæ* generally with the margins of the upper side reflexed, forming a channel; *tarsi* trimerous.

Abdomen.—Genital segments: in the ♂ the single segment on the posterior margin is either straight or notched in the centre, so that the angles are somewhat pointed. In the ♀, the first segment is generally convex; the second appears under its posterior margin; the plates of the third segment are long and divided, the obtuse points generally projecting a little beyond the abdomen. Gen. 1, *Eysarcoris;* 2, *Pentatoma;* 3, *Strachia.*

Family 8.—ASOPIDÆ.

Head subquadrangular. *Rostrum* reaching to or beyond the second pair of coxæ, stout, the base very broad; rostral channel short and shallow. *Antennæ* slender; tubercle short, inserted before the eyes. *Eyes* moderate, or large and prominent. *Pronotum* hexagonal, frequently much produced at the hinder angles. *Scutellum* triangular, sides sinuate, apex rounded. *Sternum* with a slight keel. *Legs: fore thighs* sometimes, with a spine beneath; *tibiæ* outwardly flattened, the margins on the upper side (of the fore pair especially) reflexed; on the under side a fine, acute spine; *tarsi* trimerous.

Abdomen.—Genital segments as in *Pentatomidæ.* Gen. 1, *Zicrona;* 2, *Jalla;* 3, *Rhacognathus;* 4, *Asopus;* 5, *Picromerus.*

Family 9.—RAPHIGASTRIDÆ.

Head subquadrate or angulated. *Rostrum* slender, long, or very long; rostral channel shallow. *Antennæ* slender, sometimes long. *Pronotum* hexagonal, the hinder angles sometimes much produced. *Scutellum* triangular; the sides sinuate, constricted beyond the middle; apex rounded or pointed. *Sternum* with a very deep, thin keel (sometimes slighter, and on the prosternum only). *Tibiæ* sometimes inwardly, with a fine spine; sometimes outwardly, flat, with the margins more or less reflexed; *tarsi* 3 or 2-jointed.

Abdomen beneath, on the second segment, with a mucro or a long appressed spine reaching across the sternum. The *genital segments* vary in the different genera. In *Tropicoris* and *Piezodorus* they follow the same type as in the *Pentatomidæ*. In *Acanthosoma* the structure is given under the genus. Gen. 1, *Tropicoris*; 2, *Piezodorus*; 3, *Acanthosoma*.

Section 2.—*COREINA.*

Coreodes, p., *Burm.*
Coreodæ, *Flor.*
Coreidæ, *West.*, p., *Fieb.*
Supericornes, p., *Am. et Serv.*
Supericornia, p., *Dall.*

Structure somewhat robust or elongate. *Head* with the side margins rounded. *Antennæ* (in the British species always) 4-jointed, inserted far in front of the eyes* at or near the outer anterior angle of the crown. *Ocelli* 2. *Rostrum* 4-jointed. *Scutellum* not reaching half the length of the abdomen. *Elytra: Corium*, the nerves ending in one or two rhomboidal cells on the posterior margin; *Membrane* with generally furcate nerves springing from a transverse, basal nerve. *Tarsi* trimerous, with two lobes between the two claws at the end of the last joint.

Abdomen.—The *genital segments* vary in the different genera.

* Amyot and Serville give the point of insertion of the antennæ in their Family *Supericornes* as *on* or *above* an ideal line, drawn from the eyes to the origin of the labrum; while in their Family *Infericornes* it is *below* such a line.

Family 1.—COREIDÆ.

Head: Crown more or less quadrangular; *Face* narrow, often greatly deflected, and with the central lobe spinose. *Antennæ:* basal joint often longer than the head, the last joint more or less thickened. *Pronotum* narrow in front, wide behind, hexangular or trapeziform, the hinder angles sometimes greatly raised and produced.

Abdomen wide, *connexivum* broad. *Genital segments* on the under side, especially in the ♀, more or less visible. Gen. 1, *Syromastes;* 2, *Enoplops;* 3, *Gonocerus;* 4, *Verlusia;* 5, *Coreus;* 6, *Spathocera;* 7, *Pseudophlœus;* 8, *Ceraleptus.*

Family 2.—CORIZIDÆ.

Head short, broad, posteriorly incrassated, and then constricted before its insertion into the thorax. *Antennæ:* basal joint shorter than the head, apical joint long, a little thickened. *Eyes* prominent. *Pronotum* short, trapezoidal. *Corium* mostly more or less transparent.

Abdomen.—Genital segments tapering, retractile. Gen. 1, *Therapha;* 2, *Corizus;* 3, *Myrmus.*

Family 3.—CHOROSOMIDÆ.

Long, narrow. *Head: Crown* long, sides parallel; *Face* angular, lobes of nearly equal breadth, the central one slightly the longest. *Antennæ:* basal joint long, thick, the rest tapering, the apical joint not being thicker than the third; second and third in length subequal. *Pronotum* long—trapezoidal. *Elytra* much shorter than the abdomen. *Corium* transparent. *Tarsi:* first joint longer than the other two together.

Abdomen.—Genital segments tapering, more or less retractile. Gen. 1, *Chorosoma.*

Family 4.—STENOCEPHALIDÆ.

Narrow, elliptical. *Head: Crown* long, narrow, linear; *Face*, short, narrow, triangular. *Antennæ* long, filiform; second and fourth joints long, subequal. *Eyes* small, inserted nearly in the middle of the side of the head. *Ocelli* very small, approximate, inserted at the base of the head. *Pronotum* trapezoidal.

Abdomen long, ovate; in the ♀ beneath, the last segment is flattened and with a ridge in the centre. *Genital segments* in the ♂ rounded posteriorly, in the ♀ short, the last segment rounded at the sides, the posterior margin short and emarginate. Gen. 1, *Stenocephalus*.

Family 5.—ALYDIDÆ.

Narrow, long, linear. *Head: Crown* broad, posteriorly constricted; *Face* long, triangular, deflected. *Antennæ* long, slender, almost filiform, the last joint longest. *Eyes* prominent. *Ocelli* approximate, placed between the eyes. *Legs* long, hinder *thighs* spined beneath; *tarsi*, first joint longer than the other two together.

Abdomen.—Genital segments short, obtusely pointed posteriorly. Gen. 1, *Alydus*.

Section 3.—*BERYTINA.*

Berytidæ, *Fieb.*, *Flor.*
Coreodes, p., *Burm.*
Coreidæ, p., *Westw.*
Supericornes, p., *Am. et Serv.*
Supericornia, p., *Dallas.*

Structure elongate, narrow, slender. *Antennæ* 4-jointed, very long, slender, elbowed at the base of the second joint, inserted at the front of the crown. *Eyes* inserted at the anterior portion of the sides of the head, near the base of the antennæ. *Ocelli* 2. *Rostrum* 4-jointed. *Elytra: Corium*, the nerves not furcate at the end; *Membrane* with five nerves. *Legs* long; slender; *thighs* clavate; *tibiæ* suddenly bent at the base; *tarsi* trimerous.

Abdomen narrow at the base. The *genital segments* differ in the genera as stated.

Family 1.—METACANTHIDÆ.

Head short; *Crown* not produced in front; *Face* vertical. *Antennæ* filiform; first joint very long, at the top short—clavate; second joint not short; fourth joint fusiform. *Thorax* vertically thick. *Pronotum* long-trapezoidal, the disk posteriorly globose. *Scutellum* with a spine or nodule at the base. *Elytra: Corium* diaphanous; *Membrane* transparent. *Legs* very long and slender.

Abdomen.—Genital segments without posterior processes. Gen. 1, *Metacanthus*; 2, *Metatropis*.

Family 2.—BERYTIDÆ.

Head long; *Crown* quadrangular, the sides lobe-like, the front produced into a long, vertically deep plate above the face. *Antennæ:* the first joint clavate at the top, the second joint very short, the fourth joint fusiform. *Eyes* distant from the base of the head. *Pronotum* long-trapezoidal, the disk with a central keel. *Elytra: Corium* opaque, with large transverse depressions or punctures between the strong nerves.

Abdomen.—Genital segments more or less with posterior processes. Gen. 1, *Berytus*; 2, *Neides*.

Section 4.—*CŒCIGENINA.*

Cœcigena, *Am. et Serv., Flor.*
Astemmites, p., *Lap.*
Lygæodes, p., *Burm.*
Lygæides, p., *Kolen.*
Lygæidæ, p., *Westw.*
Pyrrhocoridæ, *Fieb.*

Antennæ 4-jointed, inserted below the eye-line. *Ocelli* 0. *Rostrum* 4-jointed, free. *Elytra: Membrane* with two large cells at the base, whence spring several ramified nerves. *Tarsi* trimerous.

Family 1.—PYRRHOCORIDÆ.

Oval. *Head* from above 5-sided, from the side thick, convex. *Rostrum* reaching to the end of the *metasternum*; first joint as long as the head. *Pronotum* trapeziform. *Fore thighs* thick, with small spines.

Abdomen.—Genital segments in both sexes short; on the upper side, in the ♂, only the margin of the horizontal portion of the third segment is visible; in the ♀ the second and third are visible. On the underside, in the ♂, a large portion of the second, and the whole of the third are visible, both very convex, the posterior margin of the third suddenly and broadly horizontal: in the ♀ nearly all the space beyond the sixth abdominal segment is occupied by the first genital segment, which appears as two broad plates closely joined, in the centre of the space, in a deep, wide furrow, the sides being convex; the posterior margin widely notched; here the third segment appears in the centre, narrow and concave, with a central ridge, the space at each side being filled by the small, curved plate of the second segment. Gen. 1, *Pyrrhocoris*.

Section 5.—*LYGÆINA*.

Lygœodes, *Burm.*
Lygœidæ, *Westw.*
Lygœodæ, *Flor, Fieb.*
Infericornes, p., *Am. et Serv.*
Infericornia, p., *Dall.*

Structure more or less stout, of a hard consistence. *Antennæ* 4-jointed, inserted under (sometimes on) a line drawn from the eye to the base of the labrum. *Ocelli* 2. *Membrane* of the elytra with four or five simple nerves. *Tarsi* trimerous (except in *Zosmoridæ*).

Abdomen.—The *genital segments* differ in the Families.

Family 1.—RHYPAROCHROMIDÆ.

Head convex, triangular in front. *Antennæ:* first and fourth joints generally the thickest, the first shortest, the second usually the

longest. *Pronotum* trapezoidal or quadrangular. *Sternum* without perceptible rostral channel, the hinder margin of the *metasternum* prolonged, more or less, over the base of the abdomen. *Legs* strong, the *thighs* of the first pair mostly incrassated and armed beneath.

Abdomen: in the ♀, the first four abdominal segments beneath have the posterior margin straight; the fifth segment on the posterior margin angularly and deeply cut out in the middle, which appears raised and retracted under the fourth segment; the sixth segment long, with the posterior margin straight. *Genital segments.*—In the ♂, as a rule, only one is visible beneath, convex and rounded. In the ♀ the segments are very short; above, only the 2nd visible; beneath, on the sides, are the triangular plates of the second segment, within them the plates of the third, and in the narrow opening between these the edges of the linear plates of the first segment appear. Gen. 1, *Gastrodes;* 2, *Plociomerus;* 3, *Macronotus;* 4, *Eremocoris;* 5, *Dieuches;* 6, *Scolopostethus;* 7, *Peritrechus;* 8, *Trapezonotus;* 9, *Pionosomus;* 10, *Drymophilus;* 11, *Tropistethus;* 12, *Rhyparochromus;* 13, *Hypnophila;* 14, *Plinthisus;* 15, *Stygnocoris;* 16, *Acompus;* 17, *Ischnodemus.*

Family 2.—PHYGADICIDÆ.

Head, across the eyes wider than the front of the *pronotum*. *Antennæ* of nearly equal thickness throughout; the second joint slightly longest, terminal joint elongate. *Eyes* large, prominent. *Pronotum* long-trapeziform. *Scutellum* long-triangular. *Legs* strong, all the *thighs* stout, the first pair spined beneath; *tarsi* long, first joint longest. *Membrane* of the elytra with two basal cells.

Abdomen.—Abdominal segments in the ♀, first three straight on the posterior margin; fourth very short in the middle, lengthened angularly at each side; fifth appears on each side as an angular plate, the middle being hidden under the fourth segment; sixth greatly deflected, very long in the middle, joining the third segment, extending down between the fourth and fifth, and then broadly widened behind them, the centre ridged, the posterior margin straight. *Genital segments* short; the first appears as two very short, rounded ends between the last abdominal and the third genital segment; the second as a small triangular plate at each side; the third, rounded, and with a furrow in the middle, forms the apex of the body. Gen. 1, *Phygadicus;* 2, *Nysius.*

Family 3.—HENESTARIDÆ.

Head short, across the eyes wider than the front of the *pronotum*. *Antennæ:* first joint thickest; second joint slightly the longest; fourth joint long-fusiform. *Eyes* very prominent. *Pronotum* broad, trapeziform. *Scutellum* equilaterally triangular. *Legs: thighs*, first pair not incrassated, unarmed; *tarsi* long, first joint longest.

Abdomen.—Abdominal segments in the ♀, the first three straight on the posterior margin; fourth a little shortened in the middle; fifth very short in the middle, the sides angular; sixth long, greatly deflected, ridged in the middle, the posterior margin cut out angularly. *Genital segments:* first generally invisible; second appears as a small triangular plate on each outer side; third elongate, forming the end of the body. Gen. 1, *Henestaris*.

Family 4.—CYMIDÆ.

Head narrow, scarcely wider across the eyes than the front of the *pronotum*. *Antennæ:* first joint not much thickened, second and third slender, the second longest; fourth as thick as the first, obtuse, fusiform. *Eyes* not prominent. *Pronotum* trapeziform. *Legs: thighs*, first pair not incrassated, unarmed; *tarsi*, first and third joints in length subequal.

Abdomen.—Abdominal segments in the ♀, the first three straight on the posterior margin; fourth and fifth very short in the middle, thence sloping obliquely outwards on each side; sixth forms an oblique plate on each side, equally wide throughout. *Genital segments:* in the ♀ much deflected to the sides; the first short, barely visible; the second appears as two angulated plates with their apices in the centre; the third wide, rounded or pointed. Gen. 1, *Chilacis;** 2, *Ischnorhynchus;* 3, *Cymus*.

Family 5.—ZOSMORIDÆ.

Head broad, short: *Face*, side lobes much longer than the central lobe, projecting in front of it, curved inwards at the ends and meeting, but leaving an open space before the central lobe. *Antennæ* short; first and second joints short and stout; third joint long, slender; fourth joint clavate. *Eyes* small, but prominent, the orbit produced

* It is doubtful if this genus is rightly placed in the family, but the want of specimens for examination prevents our decision.

in front into a short, obtuse spine. *Ocelli* small, distant, inserted close to the anterior margin of the *pronotum*. *Rostrum* reaching to the first pair of *coxæ*, lying in a channel. *Pronotum* subquadrate, convex, with 2 or 3 central keels. *Scutellum* small. *Elytra: Clavus* and *Corium* subreticulate, with strong nerves; *Membrane* subreticulate at the base, with 4 nerves. *Sternum* with a central, shallow channel widened and flattened on the *metasternum*. *Legs* short, unarmed; *tarsi* (apparently) 2-jointed.

Abdomen broad at the apex; beneath, in the ♂, the first four segments on the posterior margin straight, on the fifth concave; the sixth segment in the centre convex, with a rather deep, rounded excision on the posterior margin, which is filled in a line with the rest of the segment posteriorly, by the single, convex genital segment. In the ♀ beneath, the first five *Abdominal segments* are like those of the ♂, except that the fifth on its posterior margin is more angularly cut out; the sixth segment is but slightly convex, is cleft, but not opened in the centre, and the posterior margin has in the centre a small notch from which the margin is rounded off on each side. The *Genital segments* are very short, and lie close together in a transverse line. In the middle the two narrow plates of the first segment meet; on each side next outwardly are the small plates of the third segment, and then the larger plates of the second segment. Gen. 1, *Zosmorus*.

This family, as Flor remarks, forms a perceptible transition between *Lygæina* and *Tingidina*, but, by the structure of the abdomen, is more nearly related to the former than to the latter.

Section 6.—*TINGIDINA*.

Membranacei, p., *Lat., Burm.*
Tingides, *Am. et Serv.*
Tingidæ, *Westw.*
Tingidites, *Lap.*
Tingididæ, *Fieb.*
Tingididea, *Flor.*

Antennæ 4-jointed. *Ocelli* 0. *Scutellum* wanting or rudimentary, replaced by the angulated projecting hinder portion of the *pronotum*. *Elytra* reticulated and of one, uniform, thin substance throughout. *Tarsi* 2-jointed.

Abdomen: in the ♀, the sixth abdominal segment, on the underside widening at the sides, but its posterior margin in the middle is produced

into a point. *Genital segments:* in the ♂, two are visible; the first formed like the abdominal segments; the second on the upper side has two short, horny processes; on the under side it is somewhat convex, and at the end, which is broad or narrow, is somewhat recurved;—sometimes also there is a slight impression on each side. In the ♀, the first segment is scarcely visible, and the second and third are formed like the abdominal segments, the second being shorter than the third. On the underside they are cleft in the middle, but not parted, the margins of the cleft forming a raised sutural line. The genital segments are of the same type in all the genera.

Family 1.—AGRAMMIDÆ.

Punctate-reticulate. *Head* rather large and convex. *Antennæ* short, stout, 2nd joint longest. *Eyes* rather prominent. *Rostrum* in a deep channel. *Pronotum* convex, the front without a hood, the sides without reticulated margin, widened gradually to the hinder angles; scutellar process elongate. *Elytra* convex, with fine, granulated, subreticulate punctures. Gen. 1, *Agramma.*

Family 2.—TINGIDIDÆ.

Reticulated. *Head* with 2 or 3 spines on the crown. *Antennæ:* 3rd joint longest and thinnest (sometimes apparently thickest, being densely clothed with stout hairs). *Rostrum* thin, long, in a deep channel of which the sides are raised. *Pronotum* in front, with a hood or only tumid; sides with foliaceous margins, projecting or closely lapped over on to the pronotum; disk with 1 or 3 keels; scutellar process usually long. *Elytra*, with the anterior margin more or less wide and reflexed; nerves of the disk usually forming a long lanceolate cell. Gen. 1, *Monanthia;* 2, *Derephysia;* 3, *Dictyonota;* 4, *Campylostira;* 5, *Orthostira.*

Section 7.—*HEBRINA.*

Hebridæ, *Fieb.*
Hebroidea, *Flor.*
Hebrides, *Am. et Serv.*
Hydrodromici, p., *Burm.*

Consistence hard; compressed. *Antennæ* 6-jointed. *Ocelli* 2. *Rostrum* 4-jointed. *Elytra: Clavus* membranous; *Membrane* without perceptible nerves. *Tarsi* trimerous.

Family 1.—HEBRIDÆ.

Long-oval, small, stout. *Head* long; *Crown* long, clypeate; *Face* short, broad. *Antennæ:* first and second joints stout; third and fifth very minute, like a petiole of the preceding joints. *Ocelli* small, in a line with the middle of the eyes. *Rostrum* 4-jointed, long; first and second joints very short; rostral channel with deep, raised sides. *Pronotum* hexagonal, sides before the middle very deeply constricted; disk with a central longitudinal channel and a fovea on each side of it anteriorly; posteriorly convex. *Elytra: Corium* alone coriaceous: *Clavus* posteriorly not perceptibly separated from the *membrane*. *Sternum* with a wide vertical channel. *Legs* stout, long; posterior *thighs* curved; each pair of *coxæ* very wide apart; *tarsi*, first joint very short; second short, stout, the end oblique, clasping the third so that the two joints look like one; the third long, stout; claws very short and thin. Gen. 1, *Hebrus*.

Section 8.—*CORTICICOLINA.*

Corticicolæ, *Am. et Serv.*
Membranacei, p., *Lat., Burm.*
Aradidæ, *Fieb.*
Aradoidea, *Flor.*

Head horizontal, in front developed into a long process. *Antennæ* 4-jointed, inserted on the inner side of large antenniferous processes.

Ocelli 0. *Rostrum* short, 3-jointed. *Tarsi* 2-jointed, the 2nd joint longest.

Abdomen.—The *Genital segments* differ in the families as stated.

Family 1.—ANEURIDÆ.

Very flat and thin, smooth. *Head* wide, contracted behind to a short neck; antenniferous processes broad, the end straight. *Antennæ:* fourth joint longest. *Pronotum* sub-hexagonal, twice as broad as long. *Scutellum* broad, rounded behind, almost semicircular. *Elytra: Corium* very short, merging into the *membrane*, which is very broad, with 1 basal cell and 1 nerve.

Abdomen.—Connexivum very broad, horizontal, the margin rounded; *Genital segments* rounded behind, not foliaceous. Gen. 1, *Aneurus*.

Family 2.—ARADIDÆ.

Flat, granulated all over. *Head* with a short neck; antenniferous processes long, acutely pointed. *Antennæ* mostly thick, the length of the joints varying, the 3rd longest, the 4th conical at the end. *Eyes* large, prominent. *Rostrum* longer than the head, in a narrow channel. *Pronotum* transverse, 6-sided, side margins foliaceous, posterior margin produced over the base of the elytra; disk with 4 keels. *Scutellum* long, triangular, concave. *Elytra: Clavus* very narrow; *Corium* abbreviated internally, the anterior margin wide and projecting at the base; nerves strong, forming 2 cells; *Membrane* with 4 nerves, forming three cells.

Abdomen beneath, with a fine linear, longitudinal channel; *Connexivum* broad, horizontal, foliaceous, the margin dentate; the last *Genital segment* posteriorly, with a broad, bi-lobed, foliaceous margin. Gen. 1, *Aradus*.

Section 9.—*CAPSINA.*

Astemmites, p., *Lap.*
Capsini, *Burm.*, *Kolen.*
Bicelluli, *Am. et Serv.*
Capsidæ, *Westw.*
Capsina, *Flor.*
Phytocoridæ, *Fieb.*

Structure soft, fragile. *Head* with the *Clypeus* developed. *Antennæ* 4-jointed, mostly setiform or filiform, often very long, inserted for the most part between and before the eyes. *Ocelli* 0.* *Rostrum* 4-jointed, free. *Elytra: Corium* with a *Cuneus; Membrane* with two closed cells at its base, more rarely with only one, otherwise without nerves. *Tarsi* trimerous.

Abdomen.—In the ♂ there are apparently seven *abdominal segments*, but the seventh is the first genital segment, which has entirely the form of an abdominal segment. In the ♀, on the underside, the six abdominal segments have their posterior margin either straight or the last two or three raised and retracted in the middle, the sixth often so much that it is only visible on the sides; usually the posterior margin of the last, or, when the middle of it cannot be seen, then of the penultimate segment, has a short, triangular process, overlying the base of the ovipositor, but this is sometimes wanting. The *genital segments* are formed alike in all the genera. In the ♂ the first of the two, as before stated, has entirely the form of the preceding abdominal segment; the second, or true genital segment, is large, visible above and beneath, somewhat convex beneath, gradually tapering to the apex, with an opening above for the anus and genital organs. In the ♀ the second and third segments are visible above and beneath, annular, and formed like the preceding abdominal segments, but on the underside cleft in the middle throughout their length, the margins of the cleft being parallel to each other. The second segment beneath has its posterior margin straight or a little concave, anteriorly widely extended, the angles which lie on the cleft rounded; the third segment

* Kolenati, in his 'Meletemata Entomologica,' fasc. ii, p. 95, says, "Ocelli minimi;" and adds, "Sub microscopio pro corporibus opacis constructo ocelli pone et retro oculos conspici possunt. Ocelli in Capsinis numquam nigri a me visi; semper enim pellucidi, hinc in capite pallido difficillimi visu. Facilius conspiciendi in lamella epicranii a reliquis capitis partibus separata."

narrowed posteriorly. In the cleft of the second and third segments lies the first segment, composed of two very narrow, long plates, of which the inner margins are close together, covering the ovipositor throughout its length, reaching from its base to the end of the third segment, where they are more visible than between the margins of the cleft of the second segment. The long, strong, ovipositor, when at rest, is entirely shut in and concealed by the plates of the first segment, whence it is protruded for the fulfilment of its functions. Div. 1, *Unicelluli.—Membrane* with one cell. Div. 2, *Bicelluli.—Membrane* with two cells.

Div. 1.—UNICELLULI.

Family 1.—BRYOCORIDÆ.

Short-oval. *Head* short, vertical in front; *Crown* flattish-convex; *Clypeus* convex. *Antennæ* slender, as long as or longer than the body; third and fourth joints filiform, both together longer than the second. *Eyes* more or less prominent. *Rostrum* short, reaching to the first or third pair of *coxæ*. *Pronotum* trapezoidal, with two callosities in front. *Elytra* sometimes with *cuneus* and *membrane* wanting; *Corium* very convex, when developed less convex. Gen. 1, *Bryocoris;* 2, *Monalocoris*.

Div. 2.—BICELLULI.

Family 2.—PITHANIDÆ.

Linear-elongate. *Head* large, vertical in front, viewed from the side subglobose; *Crown* flat, horizontal; *Clypeus* prominent, very convex. *Antennæ* shorter than the body; first joint short, stout; second slightly clavate; third and fourth filiform. *Eyes* prominent, spheroidal. *Rostrum* long, almost reaching to the first abdominal segment, third and fourth joints somewhat fusiform. *Pronotum*, in developed examples, long-trapezoidal, constricted in front; in undeveloped examples cylindrical, constricted at each end, with two large callosities in front. *Scutellum* triangular, wider at the base in developed examples than in undeveloped ones. *Elytra:* sometimes with the *cuneus* and *membrane* wanting, and the *Corium* very short, barely covering the first abdominal segment; when developed, the elytra cover the abdomen. *Gen.* 1, *Pithanus*.

Family 3.—MIRIDÆ.

Linear-elongate, more or less parallel. *Head* horizontal; viewed from the side almost a parallelogram; *Clypeus* triangular; apex sometimes reflexed; or, *Crown* horizontal; *Clypeus* very convex, overhanging the face. *Antennæ* variable in length; first joint stout, longer than or as long as the head; second not so stout as the first, and considerably longer; third and fourth somewhat filiform, both together longer or shorter than the second. *Rostrum* variable in length, sometimes reaching to the second, or third pair of *coxæ*, sometimes to the second abdominal segment. *Pronotum* trapezoidal, sometimes with two callosities in front; sides margined, sometimes reflexed. *Elytra* sometimes with the *cuneus* and *membrane* almost wanting, or with the *membrane* imperfectly developed; in the latter case the *cuneus* is carried round the apex of the former and the outer cell is very long; when developed the *cuneus* is long, narrow, triangular. *Thighs* sometimes toothed beneath. Gen. 1, *Miris;* 2, *Acetropis;* 3, *Lopomorpha.*

Family 4.—PHYTOCORIDÆ.

Longish oval; sides more or less parallel. *Head* viewed from the side quadrate, or almost a parallelogram; *Crown* flattish; *Clypeus* convex. *Antennæ* as long as or longer than the body; first joint long, stout, as long as half the head and the pronotum; second, third, and fourth almost filiform. *Eyes* more or less prominent. *Rostrum* long, reaching to beyond the third pair of *coxæ*, sometimes to the middle of the abdomen. *Pronotum* short, trapezoidal, with a collar in front, behind which are generally two callosities. *Elytra* longer than the abdomen; *Corium* flattish convex. Gen. 1, *Miridius;* 2, *Phytocoris.*

Family 5.—DERÆOCORIDÆ.

Longish oval or elongate; sometimes broad, sides parallel. *Head* generally vertical in front; *Crown* more or less convex; *Clypeus* convex, sometimes rounded at the apex and overhanging the face. *Antennæ* shorter or longer than the body; sometimes stout; third and fourth joints sometimes thickened, seldom shorter than the

second. *Eyes* prominent. *Rostrum* reaching to the second pair of *coxæ*, sometimes to the second or third abdominal segment. *Pronotum* trapezoidal, with a collar, sometimes margined behind the latter. *Elytra* longer than the abdomen; *Corium* convex or flattish convex. Gen. 1, *Deræocoris*; 2, *Pantilius*.

Family 6.—LITOSOMIDÆ.

Somewhat elongate, slightly elliptic. *Head* almost vertical in front; *Crown* flattish; *Clypeus* convex; *Face*, central lobe convex, projecting beyond the clypeus. *Antennæ* shorter than the body; first joint stout, about as long as the head; second gradually thickened to the apex; third and fourth filiform, together shorter than the second. *Eyes* somewhat prominent. *Rostrum* reaching to the second or third pair of *coxæ*; first joint stout. *Pronotum* short trapeziform. *Elytra* longer than the abdomen; *Corium* flattish, Gen. 1, *Litosoma*.

Family 7.—PHYLIDÆ.

Elongate, narrow, sometimes delicate, sides almost parallel. *Head* vertical in front or much deflected from behind the eyes to the apex of the *face*; with or without a transverse keel behind the eyes; *Crown* convex, deflected or almost flat; *Clypeus* convex. *Antennæ* slender, as long as or longer than the body; first joint stout, longer or shorter than the head. *Eyes* large, prominent. *Rostrum* reaching to or beyond the third pair of *coxæ*. *Pronotum* generally campanulate, sometimes trapeziform; with or without two almost obsolete callosities in front. *Elytra* sometimes with *cuneus* and *membrane* wanting; *Corium* very convex; when the elytra are developed, less convex or flat. Gen. 1, *Ætorhinus*; 2, *Sphyracephalus*; 3, *Byrsoptera*; 4, *Phylus*.

Family 8.—CAMARONOTIDÆ.

Elongate, somewhat narrow. *Head* long, triangular, very considerably deflected from the hinder margin to the apex, with a distinct transverse keel almost in a line with the hinder margins of the eyes; *Clypeus* slightly convex. *Antennæ* shorter than the body; first joint somewhat stout, about half as long as the head; second

long, slightly thickened to the apex; third and fourth filiform. *Eyes* large, prominent; hinder margin slightly projecting beyond the transverse keel. *Rostrum* reaching to beyond the third pair of *coxæ*; first joint stout. *Pronotum* longish trapeziform, without callosities in front. *Elytra* widened from beyond the middle to the *cuneus*; *Corium* convex, somewhat embracing the abdomen, and elevated towards the junction with the *cuneus* and *membrane*, which are very much deflected and flat. *Legs*: third pair of *tibiæ* thickened in the middle, somewhat bent and flattened on the sides. Gen. 1, *Camaronotus*.

Family 9.—GLOBICEPIDÆ.

Elongate, narrow, parallel. *Head* vertical in front; *Crown* flattish convex, in the undeveloped ♀ very convex, and considerably raised above the upper margin of the eyes. *Antennæ* shorter than the body; second joint thickened towards the apex, in the ♀ much more so than in the ♂; third and fourth filiform. *Eyes* large, prominent. *Rostrum* reaching to the second pair of *coxæ*. *Pronotum* longish trapeziform, constricted in front, with two large callosities behind the constriction. *Elytra* sometimes with *cuneus* and *membrane* imperfectly developed; *Corium* less convex in developed than in undeveloped examples. Gen. 1, *Globiceps*.

Family 10.—IDOLOCORIDÆ.

Short or elongate, narrow, parallel; sometimes slightly oval and very delicate. *Head* viewed from above sometimes pentagonal and deflected in front, or vertical in front, transversely oval, and generally produced into a neck behind the eyes; *Crown* more or less convex; *Clypeus* sometimes overhanging the face. *Antennæ* slender, of variable length, shorter than or as long as the body; second joint generally more or less clavate; third and fourth filiform. *Eyes* large or small, more or less prominent, the hinder margin sometimes resting on the anterior margin of the *pronotum*. *Rostrum* sometimes free, generally reaching to the second or third pair of *coxæ*, sometimes to the second abdominal segment; first joint of variable length. *Pronotum* longish trapeziform, or longish campanulate, with a more or less broad collar in front, behind which are two callosities, sometimes almost obsolete.

Elytra sometimes with *cuneus* and *membrane* wanting; *Corium* convex; when developed, the *Corium* somewhat flat.

Abdomen sometimes very much narrowed at the base. Gen. 1, *Cyllocoris*; 2, *Systellonotus*; 3, *Campyloneura*; 4, *Idolocoris*; 5, *Macrolophus*; 6, *Malacocoris*.

Family 11.—ONCOTYLIDÆ.

Elongate, somewhat parallel, sometimes suboval. *Head* almost vertical in front, or very much deflected; *Crown* flattish, sometimes convex; *Clypeus* more or less convex; *Face*, central lobe sometimes prominent. *Antennæ* sometimes as long as the body, generally shorter; second joint clavate or thickened to the apex; third and fourth filiform. *Eyes* prominent. *Rostrum* sometimes stout, reaching to the third pair of *coxæ*, or to the second or third abdominal segment. *Pronotum* short, trapeziform, with two callosities in front. *Scutellum* triangular, generally equilateral. *Elytra* convex or flattish convex. Gen. 1, *Anoterops*; 2, *Macrocoleus*; 3, *Amblytylus*; 4, *Tinicephalus*; 5, *Oncotylus*; 6, *Hoplomachus*; 7, *Conostethus*.

Family 12.—PSALLIDÆ.

Somewhat elongate and parallel, or short; sometimes broad oval. *Head* almost vertical in front; *Crown* flattish convex, generally deflected to the base of the clypeus; *Clypeus* convex or flattish; base generally almost in a line with the anterior margin of the eyes, sometimes lower, apex sometimes slightly produced. *Antennæ* shorter than the body; second joint three to four times as long as the first, generally thickened to the apex; third and fourth filiform, together shorter than the second. *Eyes* large, sometimes prominent. *Rostrum* sometimes free, reaching to the third pair of *coxæ*, sometimes to the second abdominal segment. *Pronotum* short, trapeziform, with two callosities in front. *Scutellum* triangular, sometimes almost equilateral. *Elytra* convex or flattish convex. Gen. 1, *Plagiognathus*; 2, *Apocremnus*; 3, *Psallus*; 4, *Sthenarus*.

Family 13.—CAPSIDÆ.

Elongate, narrow, almost parallel; sometimes short, suboval or oval; rarely minute. *Head* sometimes stouter in the ♀ than the ♂;

horizontal, very much deflected or vertical in front; sometimes pointed; *Crown* convex, or almost flat; *Clypeus* convex, rarely prominent, and rounded at the apex. *Antennæ* shorter than the body; first and second joints generally incrassated, especially the second, which is sometimes fusiform at the apex, rarely entirely fusiform, and flattened on the sides; third and fourth fusiform. *Eyes* large, sometimes very large and prominent. *Rostrum* reaching to the second or third, or beyond the third, pair of *coxæ*. *Pronotum* longish or short-trapeziform, sometimes with a collar in front, generally with two callosities behind the latter. *Elytra* (sometimes with *cuneus* and *membrane* wanting); *Corium* very convex; when the elytra are developed, less convex. *Legs* sometimes saltatorial; *Thighs*, third pair frequently stout, flattened on the sides. Gen. 1, *Neocoris;* 2, *Agalliastes;* 3, *Orthocephalus;* 4, *Heterocordylus;* 5, *Atractotomus;* 6, *Heterotoma;* 7, *Rhopalotomus;* 8, *Capsus;* 9, *Polymerus.*

Family 14.—LYGIDÆ.

Elongate or short-oval. *Head* generally vertical in front; *Crown* convex or flattish convex; *Clypeus* convex. *Antennæ* of variable length, sometimes as long as or only half the length of the body; second joint two and a half to three and a half times as long as the first, generally gradually thickened to the apex; third and fourth filiform, together shorter or longer than the second. *Eyes* large and prominent. *Rostrum* rarely free; of variable length, reaching to the end of the mesosternum, or, third pair of *coxæ*. *Pronotum* trapeziform, rarely obscurely hexagonal, with a collar and two callosities in front; the anterior margin generally constricted. *Elytra* sometimes with the *membrane* abbreviated; *Corium* convex; when developed, less convex. Gen. 1, *Charagochilus;* 2, *Camptobrochys;* 3, *Liocoris;* 4, *Orthops;* 5, *Lygus;* 6, *Pœciloscytus.*

Family 15.—HARPOCERIDÆ.

♂ Elongate, somewhat parallel; ♀ broad, slightly oval. *Head* vertical in front; *Crown* convex; *Clypeus* convex. *Antennæ* shorter than the body; second joint, in the ♂, half as long as the third, on the under side, at the apex, produced into a flattish, triangular lobe; in the ♀ not produced into a lobe at the apex; third straight in the ♂, curved in the ♀. *Eyes* large and prominent;

Rostrum reaching to the end of the mesosternum. *Pronotum* trapeziform, with two callosities in front. *Elytra* longer than the abdomen; *Corium* flattish convex. Gen. 1, *Harpocera*.

Family 16.—MYRMICOCORIDÆ.

In developed examples elongate, slightly oval; in undeveloped examples broadly oval posteriorly. *Head* pointed, vertical in front; *Crown* convex; *Clypeus* very convex. *Antennæ* shorter than the body; second joint two and a half times as long as the first; fourth compressed on the sides. *Eyes* large, prominent. *Rostrum* reaching to the first abdominal segment. *Pronotum* longish trapeziform, with a collar and two callosities in front; in undeveloped examples the callosities are generally formed into one, and occupy the entire width of the pronotum. *Scutellum* triangular, equilateral. *Elytra* frequently with *Cuneus* and *Membrane* wanting; *Corium* very convex, when developed flattish convex, constricted before the middle. Gen. 1, *Myrmicocoris*.

Family 17.—LOPIDÆ.

Elongate, almost parallel. *Head* vertical in front; *Crown* flat, horizontal; *Clypeus* convex. *Antennæ* as long as the body; second joint a little more than twice as long as the first, slightly thickened to the apex; third and fourth filiform, together as long as the second. *Eyes* large, prominent. *Rostrum* reaching to the end of the metasternum. *Pronotum* trapeziform, with a collar and two callosities in front; sides margined to behind the callosities. *Scutellum* triangular, equilateral; the anterior portion almost or entirely concealed beneath the posterior margin of the pronotum. *Elytra* longer than the abdomen; *Corium* flattish convex. Gen. 1, *Lopus*.

Family 18.—DICHROOSYCTIDÆ.

Elongate, almost parallel. *Head* long, pointed; viewed from the side, the *crown*, *clypeus*, and *face*, form a continuous curve. *Antennæ* shorter than the body; second joint more than three times the length of the first, scarcely thickened to the apex; third and fourth filiform, together a little shorter than the second. *Eyes* large, prominent. *Rostrum* free, reaching to the second or third

abdominal segment; first joint reaching to the apex of the xyphus of the prosterùum. *Pronotum* short-trapeziform, with a narrow collar and two callosities in front. *Scutellum* triangular, equilateral; the anterior portion almost entirely concealed beneath the posterior margin of the pronotum. *Elytra* longer than the abdomen; *Corium* convex. Gen. 1, *Dichroosyctus.*

Family 19.—HALTICOCORIDÆ.

Very short, widely oval posteriorly. *Head* long, pointed, vertical in front; viewed from the side, the *crown*, *clypeus*, and *face*, form a continuous curve; *Crown*, hinder margin with or without a keel between the eyes; *Clypeus* long, convex. *Antennæ* thin, considerably longer than the body; second joint four times the length of the first; third and fourth filiform, together much longer than the second. *Eyes* small, more or less prominent. *Rostrum* reaching to the end of the metasternum; first joint stout, reaching to the apex of the xyphus of the prosternum. *Pronotum* in developed examples trapeziform, with two flattish callosities in front; in undeveloped examples broad or narrow, the callosities almost obsolete, or occupying at least half of the disk. *Scutellum* triangular, the anterior portion concealed beneath the posterior margin of the pronotum. *Elytra* sometimes without the *clavus*, and frequently with the *cuneus* and *membrane* also wanting; *Corium* very convex; when developed, a little less convex. Gen. 1, *Halticocoris.*

Family 20.—STIPHROSOMIDÆ.

Short, broad, ovate. *Head* triangular, vertical in front; viewed from above, very short; *Crown* almost flat; *Clypeus* convex. *Antennæ* very short, scarcely half the length of the body; second joint three times as long as the first; third and fourth filiform, together as long as the second. *Eyes* small, prominent. *Rostrum* reaching to the metasternum; first joint stout, reaching to the end of the xyphus of the prosternum. *Pronotum* short-trapeziform, with two flat callosities in front. *Scutellum* triangular; the anterior portion concealed beneath the posterior margin of the pronotum. *Elytra* as long as, or a little longer than, the abdomen; *Corium* convex, anterior margin reflexed next the base. Gen. 1, *Stiphrosoma.*

Section 10.—*ANTHOCORINA.**

Lygæodes, p., *Burm.*
Anthocorides, *Am. et Serv.*
Anthocoridea, *Flor.*
Microphysæ, Anthocoridæ, Acanthiadæ, and Ceratocombidæ, *Fieb.*

Antennæ slender, 4-jointed, inserted below the eye-line. *Ocelli* 2 or 0. *Rostrum* 3 or 4-jointed; free (except in *Acanthiidæ*). *Elytra* often abbreviated; when developed, with *Clavus*, *Corium*, *Embolium*, *Cuneus*, and *Membrane* (except in the Families *Acanthiidæ* and *Ceratocombidæ*, which are aberrant). *Wings* often wanting. *Tarsi* 2 or 3-jointed.

Family 1.—MICROPHYSIDÆ.

Antennæ filiform. *Ocelli* 2; large and prominent in ♂, very small in ♀. *Rostrum* 4-jointed; first joint very short. *Elytra* in the ♂ longer than the abdomen; *Corium* with long *Embolium*; *Cuneus* triangular; *Membrane* in the middle of its base, with one semi-oval cell, from which spring three short nerves and one nerve at the inner side of the cell, or near the inner basal angle; in the ♀ the *Elytra* are short, sometimes not so long as the abdomen, sometimes only rudimentary; *Clavus* and *Membrane* undeveloped. *Tarsi* 2-jointed, the first very short.

Abdomen.—In ♂ cylindrical, pointed; in ♀ broad, short, longitudinally or transversely oval. Gen. 1, *Myrmedobia*; 2, *Zygonotus*.

Family 2.—ANTHOCORIDÆ.

Head, from the side, almost conical. *Antennæ* 4-jointed; the second joint sometimes thickened to the apex; the third and fourth filiform or thin fusiform. *Ocelli* 2, sometimes very small in the ♀. *Rostrum* 3-jointed. *Pronotum* trapezoidal. *Scutellum* large. *Elytra*

* Fieber has characterised and figured most of the genera in the 'Wiener Entom. Monatsschrift,' 1860.

sometimes rudimentary, or partially developed; when perfect, consisting of *Clavus*, *Corium*, *Embolium*, *Cuneus*, and *Membrane*. *Membrane* with 1—4 nerves arising from the end and long side of a very narrow, triangular, basal cell. *Tarsi* trimerous. Gen. 1, *Tetraphleps;* 2, *Temnostethus;* 3, *Anthocoris;* 4, *Lyctocoris;* 5, *Piezostethus;* 6, *Triphleps;* 7, *Brachysteles;* 8, *Cardiastethus;* 9, *Xylocoris.*

Family 3.—ACANTHIIDÆ.

Head broad, convex; *Face* triangular, the lobes not defined, projecting between the antennæ in a broad triangle; antenniferous processes stout. *Antennæ:* the first two joints thick; third and fourth filiform. *Eyes* large, prominent. *Ocelli* 0. *Rostrum* 3-jointed, short, lying in a channel on the under side of the head; *Labrum* triangular. *Pronotum* subreniform, wider than long; side margins foliaceous, projecting in front as far as the eyes. *Scutellum* broad, short, triangular. *Elytra*, with *Corium* only, very broad and short. *Sternum;* the middle of the *mesosternum* broad and flat. *Legs* strong. *Tarsi* trimerous.

Abdomen broad, oval, wider at the base than the pronotum; beneath, in the middle, with a broad flat process, arising on the second segment, extending forwards, and joined to the plate of the mesosternum. Gen. 1, *Acanthia.*

Family 4.—CERATOCOMBIDÆ.

Antennæ flagellate, long-haired; the first joint very small. *Ocelli* 2. *Rostrum* 3-jointed. *Elytra* (when developed): the *Corium* without *Embolium*; the separation from the *Membrane* imperceptible; the nerves forming large cells. *Wings* often undeveloped; when present, with a long, narrow cell below the upper marginal nerve. *Tarsi* trimerous. Gen. 1, *Ceratocombus;* 2, *Dipsocoris.*

Section 11.—*OCULATINA.*

Oculati, *Lat., Am. et Serv.*
Riparii, *Burm.*
Oculata, *Flor.*
Saldæ, *Fieb.*

Stout, convex, especially on the under side. *Clypeus* long; *Face* vertical. *Antennæ* 4-jointed, inserted before and under the eyes. *Eyes* very large, prominent. *Ocelli* 2. *Rostrum* 3-jointed, free. *Legs:* third pair saltatorial; *tarsi* trimerous.

Abdomen.—In the ♀ beneath, the last segment roundly produced, covering the *genital segments.*

Family 1.—SALDIDÆ.

Head above, five-sided, across the eyes broader than long. *Antennæ:* second joint longest; third and fourth subfusiform or fusiform. *Eyes* subreniform, projecting outwards and backwards. *Ocelli* in the middle of the crown, approximate. *Rostrum* long, aculeate; *labrum* long-triangular. *Membrane* with five nerves, not extending to any of the margins, but roundly joined together at the ends, forming four long, parallel cells. *Legs:* third pair longest. Gen. 1, *Salda.*

Section 12.—*REDUVINA.*

Reduvini, *Burm.*
Reduviidæ (*Steph.*), *Westw.*
Reduvina, *Flor.*
Reduvidæ et Nabidæ, *Fieb.*
Nudirostri, p., *Am. et Serv.*

Structure soft, sometimes delicate. *Head* mostly long, produced behind the eyes; *Clypeus* more or less produced. *Antennæ* 4—8-jointed, slender, sometimes very long. *Eyes* prominent, inserted at or behind the middle of the sides of the head. *Ocelli* 2, close to

the base of the eyes, or wanting. *Rostrum* free, short, thick, and 3-jointed, or long, slender, and 4-jointed. *Pronotum* stout, somewhat long-trapeziform, narrowed in front; a transverse furrow on the disk before the middle, where also the sides are deeply constricted. *Scutellum* with or without a basal nodule. *Elytra: Corium* long and narrow, the posterior margin oblique, without suture, or straight and well defined; *Membrane* with one, two, or three cells, and one or several nerves therefrom. *Legs* moderate, strong; or the second and third pairs very long and slender; *tarsi* trimerous.

Abdomen.—The *segments* differ in the families or genera, as stated.

Family 1.—REDUVIDÆ.

Elongate. *Head* convex, constricted, and on the upper side transversely incised behind the eyes; the posterior portion of the head globose or elongate, and more or less trigonate. *Antennæ* 4—8-jointed; long, or very long, and slender; each inserted on a small process in front of the eyes (the intermediate joints minute). *Eyes* inserted at the middle of the sides of the head. *Ocelli* close or distant, rarely wanting. *Rostrum* short, thick, curved, 3-jointed, reaching nearly to the fore *coxæ*. *Pronotum* with a central, longitudinal depression, and a transverse depression before the middle, the sides constricted at the same place. *Elytra: Corium* submembranous, narrow, much extended on the anterior margin, and obliquely shortened within; posterior margin without membrane-suture: *Membrane* extended up the inner margin of the corium; posteriorly very broad, with one or two long, closed cells, not reaching to the posterior margin, and one nerve from them posteriorly. *Legs:* third pair longest; second and third pairs sometimes very long. Gen. 1, *Ploiaria;* 2, *Pygolampis;* 3, *Coranus*; 4, *Reduvius.*

Family 2.—NABIDÆ.

Elongate. *Head* produced behind the eyes into a short neck; *Clypeus* not much produced. *Antennæ* 5-jointed, filiform, inserted on a process at the sides of the head, in front of the eyes. *Eyes* large or moderate, inserted behind the middle of the sides of the head. *Ocelli* in a line with, or posterior to, the base of the eyes.

Rostrum 4-jointed, curved, reaching to the first or second pair of coxæ; the first joint very stout. *Pronotum* in front narrow and rounded, or annularly contracted; disk with a slight transverse incision or depression beyond the middle; the sides also there constricted; widened posteriorly. *Elytra: Corium*, posterior margin straight, well defined; *Membrane* in the middle, with three long, closed cells, not extending to the margins; the nerves diverging from them all round, and forming several marginal cells (the *clavus* and *corium* sometimes, and the *membrane* often, but partially developed). *Legs:* third pair longest; *thighs*, first and second pair thick, fusiform; *tibiæ*, first and second pairs with a spongiose cushion at the extremity.

Abdomen.—Genital segments, in the ♂ above, 1, trapeziform, broad, deflected, and projecting; the sides posteriorly with a contorted process; beneath 2, the first visible merely as a narrow rim within the sixth abdominal segment, the second as on the upper side, but convex, posteriorly roundly deflected: in the ♀ above, 2, the first short, not so wide at the base as the sixth abdominal segment, and narrower posteriorly; the second longer, rounded posteriorly; beneath, the fifth and sixth abdominal segments are raised up and shortened in the middle, the sixth very short, but broad on the sides; in the opening thus formed the broad ovipositor occupies the centre; on each side is the angulated plate of a genital segment, its upward apex covered by the angular, projecting point of another segment. Gen. 1, *Metastemma;* 2, *Nabis.*

Sub-Div. 2.—Hydrodromica.*

Section 1.—*HYDROMETRINA.*

Hydrometræ and Hydroëssæ, *Fieb.*
Hydrometridea, *Flor.*

Structure hard, horny. *Form* elongate and subparallel, or long-oval. *Antennæ* inserted on the sides of the head before the eyes, 5 or 6-jointed† (the third or third and fifth joints very minute).

* Page 11.

† At page 10 the antennæ of the Division Gymnocerata are given as 3—4-jointed, the small intermediate joints in the present section (also in *Hebrina* and in *Reduvina*) not being generally considered to be true joints, but each as belonging to the joint immediately preceding it.

Eyes at the base of the head, rather large, hemispherical, prominent. *Ocelli* 0 or 2, very small and indistinct. *Rostrum* 3—4-jointed. *Pronotum* united to the *Mesonotum*, posteriorly produced in a scutellar form. *Scutellum* wanting. *Elytra* of a hard, uniform consistence throughout, not divided into *Clavus*, *Corium*, and *Membrane*, traversed longitudinally by strong nerves, which anastomose in places, and so form closed cells. (The *Elytra* and wings are sometimes but partially developed, sometimes wholly wanting.) *Sternum* flat or convex. *Legs: Coxæ* of the second and third pairs inserted at the sides of the sternum; second pair of legs usually the longest; *tarsi* 2—3-jointed, the last joint with two fine claws inserted before its apex; *Pulvilli* wanting.

Abdomen.—In both sexes six abdominal segments visible; the *Genital segments* vary in the genera as stated.

Family 1.—HYDROMETRIDÆ.

Long, narrow. *Head* long, 5-sided, curved; *Face*, central lobe prominent. *Antennæ* inserted on a horizontal process at the sides of the head, 5-jointed; the third, minute. *Eyes* large, globose, close to the pronotum. *Ocelli* small. *Rostrum* reaching to the first pair of coxæ, 4-jointed; first and second joints short, third very long. *Pronotum* long, 5-sided, in front depressed, sides subparallel; the sides towards the hinder angles mostly incrassated and raised into a tubercle, the margin turned under; scutellar process triangular. *Elytra* flat, nerves strong, forming five long closed cells. *Sternum* convex, rather wider than the pronotum; *Mesosternum* very long. *Legs:* first pair short, second and third pairs long, thin; *Coxæ*, first and second pairs inserted in a horizontal projecting sheath posteriorly on the sides of the meso- and metasternum; *Thighs*, first pair stout, somewhat flattened; second and third pairs long, cylindrical; *tibiæ*, first pair stout, obtuse; second and third pairs long, filiform; *tarsi*, first pair stout, short; second and third pairs very long, filiform; *claws* short, the base covered by a projection of the upper side of the last joint of the tarsus.

Abdomen very convex beneath; *Connexivum* broad, reflexed, on the sixth segment produced into a long and sharp or a triangular point. Gen. 1. *Hydrometra.*

Family 2.—VELIIDÆ.

Stout, oval, broadest across the pronotum; usually apterous. *Head* short, 5-sided, convex, vertical in front; *Face* short. *Antennæ* 5 or 6-jointed, the third (or third and fifth) minute. *Eyes* large, close to the pronotum. *Ocelli* 2 or 0. *Rostrum* 3-jointed, lying on the sternum. *Pronotum* 5-sided, short, subrhomboidal; scutellar process triangular. *Elytra* flat; nerves strong, forming 4—6 closed cells. *Sternum* not so wide as the pronotum; sheaths of the second and third pairs of *coxæ* oblique or vertical, each pair nearly the same distance apart transversely. *Legs* not very long; first pair shortest, second pair slightly longest; *tibiæ* thin; *tarsi* trimerous, or 2-jointed on the first pair, on second and third pairs the second joint longer or shorter than the first.

Abdomen very convex beneath; *Connexivum* broad, reflexed, on the sixth segment produced posteriorly or rounded. Gen. 1, *Velia*; 2, *Microvelia*.

Section 2.—*LIMNOBATINA*.

Limnobatidæ, *Fieb.*

Structure hard. Form elongate, very narrow and sublinear. *Head* very long, subcylindrical, widened to the front behind the *face*, which is very short. *Antennæ* very long, filiform, 4-jointed. *Eyes* large, hemispherical, deeply inserted near the middle of the sides of the head. *Ocelli* 0. *Rostrum* 3-jointed. *Thorax* very long: *Pronotum* and *Mesonotum* united into one piece, produced posteriorly;* *Metanotum* depressed, as long as the *pro-* and *mesonotum* together; *Elytra* very narrow, rarely as long as the abdomen, generally only as long as the metanotum. *Sternum:* coxal sheaths progressively longer and more prominent at the sides; first pair vertical, second and third pairs hindwardly oblique. *Legs* thin, filiform; first and second pairs subequal, third pair longest; *tarsi* long, cylindrical, on all legs subequal, the last joint with two fine, short claws inserted *at* the end.

Abdomen in both sexes with six abdominal segments visible; *Connexivum* not produced posteriorly; *Genital segments* extending beyond the sixth abdominal segment.

* As in the foregoing section, for the sake of brevity, and for want of a better term, we call this plate "*pronotum*."

Family 1.—LIMNOBATIDÆ.

Head horizontal, as long as the thorax, widest on the anterior margin of the *clypeus; Face* very short, narrow, deflected; cheek-plates long, projecting. *Antennæ* inserted at the end of the widened front of the head; first joint stoutest and shortest; third longest. *Thorax* much wider than the head.

Abdomen flat above, convex beneath; *Connexivum* reflexed, narrow in the ♂ broad in the ♀, gradually diminished from the middle to the base and apex, not produced into a point posteriorly; *Genital segments* in ♂ quadrangular, in ♀ short, obtuse; in both sexes terminating with a small superior incurved spine. Gen. 1, *Limnobates*.

Div. 2.—CRYPTOCERATA.*

Sub-Div. 1.—Litoralia.

Contains only the Genus *Pelogonus*, Latr., which is wanting in Britain.

Sub-Div. 2.—Aquatilia.

Section 1.—*APHELOCHIRINA.*

Acanthiidæ, p., *Westw.*
Aphelochiræ, *Fieb.*

Head (including the eyes) triangular, deeply set in the pronotum; *Face* on the same plane as the *Crown*. *Antennæ* 4-jointed, simple. *Eyes* posterior, oblique. *Rostrum* 3-jointed, very long, aculeate; *Labrum* triangular. *Pronotum* broad, transverse; posterior margin longer than the breadth of the abdomen. *Elytra* coriaceous throughout; *Embolium* triangular. *Prosternum* concave at the sides. *Legs:* first pair raptorial, inserted anteriorly on the disk of the prosternum; *Coxæ* large, long; *thighs* compressed, first pair broadest and shortest; *tarsi* all 2-jointed, and with two claws.

Abdomen broad, oval, the margins serrate.

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* Page 11.

Family 1.—APHELOCHIRIDÆ.

Oval, depressed. *Antennæ:* the four joints progressively longer. *Rostrum* reaching to the second abdominal segment, resting on the sternum; second joint very long. *Pronotum* subtrapezoidal; anterior margin very roundly concave, anterior angles produced exterior to the eyes, hinder angles projecting. *Elytra* (rarely developed) in repose leaving a broad lateral portion of the abdomen uncovered; *Membrane* nerveless. *Sternum: Prosternum* concave at the sides; *Mesosternum* short, with a middle keel; *Metasternum* depressed, triangular, sides raised. *Legs: thighs,* third pair longest, simple; *tibiæ,* third pair compressed, subtrigonate, ciliated; *tarsi,* first and second pairs stoutest, about one third the length of the tibiæ; third pair slender, rather shorter than the tibiæ; *claws* long, slender.

Abdomen beneath; the posterior margin of the segments except the last angularly cut out, the last roundly for the reception of the wide *genital segments,* which project a little beyond the acute points; the posterior margin, in the middle, with two small points. Gen. 1, *Aphelocheirus.*

Section 2.—*NAUCORINA.*

Nepidæ, p., *Leach; Westw.*
Nepini, p., *Burm.*
Naucorides, *Am. et Serv.*
Naucoridæ, *Fieb.*
Naucoridea, *Flor.*

Head short, transverse; *Face* very short, vertical. *Antennæ* 4-jointed, stout, simple; inserted on the under side of the head, and lying in a cavity beneath each eye. *Eyes* posterior, very large, triangular. *Rostrum* 3-jointed, free, short, thick, conical, nearly vertical; *Labrum* large, triangular. *Pronotum* transverse, subtrapezoidal, wider than the head. *Scutellum* large, triangular. *Elytra* pergamentous throughout; *Clavus* broad; *Embolium* broad, distinct, nearly half the length of the corium; *Membrane* indistinctly separated from the corium,* nerveless. *Wings* laid in two longitu-

* The distinction clearly seen on the under side.

dinal folds. *Sternum*, especially the *prosternum*, concave. *Legs* very stout; first pair raptorial, the *coxæ* inserted near the anterior angles of the prosternum; the *thighs* greatly dilated, with a groove beneath for the reception of the tibiæ when at rest; the *tibiæ* falcate; the *tarsi* monomerous, very short, unarticulated, without claws:—second and third pairs; *thighs* compressed, grooved beneath; *tibiæ* angulated, furnished with long, stout spines, and long ciliæ on the inner side; *tarsi* long, 2-jointed, articulated, ciliated on the inner side, the last joint with two claws. *Stigmata* of the abdomen very small and indistinct.

Family. 1.—NAUCORIDÆ.

Broad-oval. *Head* posteriorly straight, somewhat deeply inserted in the pronotum; anteriorly rounded, the eyes within the line of the circumference. *Antennæ:* third joint longest. *Pronotum:* anterior margin somewhat squarely cut out, the anterior angles projecting exterior to the base of the eyes. *Elytra* broad; *Clavus* and *Corium* each with one nerve. *Sternum:* the plates disconnected, and overlapping; those of the *metasternum* raised over the third pair of *coxæ*.

Abdomen depressed, dilated, thin, and serrate at the margins. *Connexivum* narrow. *Genital segments* short, covered beneath with long hairs. Gen. 1, *Naucoris*.

Section 3.—*NEPINA.*

Notonectides, p., *Leach.*
Nepidæ, p., *Westw.*
Nepini, p., *Burm.*
Nepides, *Am. et Serv.*
Nepæ, *Fieb.*
Nepina, *Flor.*

Long, cylindrical; or long-oval, very flat, and thin. *Head* small, short, deeply set in the pronotum. *Antennæ* beneath the head, short, 3-jointed, the second joint laterally produced. *Eyes* large, posterior, prominent. *Rostrum* 3-jointed, free, short, stout; *Labrum* very small, triangular. *Pronotum* long and narrow, widened posteriorly, or broad-subtrapeziform. *Elytra* shorter than, or as

long as, the abdomen; *Embolium* indistinct; *Corium* long, posterior margin oblique; *Membrane* filled with reticulated nerves. *Wings* ample, with four strong nerves, the three anterior ones forming two long, closed cells; from the nerves proceed many transverse, delicate nervures. *Sternum* convex, deeply excavated beneath the coxæ. *Legs:* first pair raptorial; the *coxæ* very long, inserted at the anterior angles of the prosternum; *thighs* dilated, grooved beneath for the reception of the tibiæ; *tibiæ* curved:—second and third pairs of legs simple; *tarsi* all monomerous, united to the tibiæ; first pair without claws, second and third pairs with two long claws.

Abdomen without stigmata at the sides, the end furnished with two long filaments, which, united and projected above the surface of the water, form a passage for the air to two spiracles placed at the sides of the anus; *Connexivum* moderate, reflexed.

Family 1.—RANATRIDÆ.

Long, cylindrical. *Antennæ:* second joint as long as the first, with a short, stout, oblique lateral process; third fusiform, stout, not incumbent on the second, and reaching beyond its process. *Eyes* large, prominent. *Rostrum* porrected; first joint greatly contracted at the base. *Pronotum* very long, narrowest in the middle, most widened posteriorly; posterior margin angularly excised. *Scutellum* rhomboidal. *Elytra* laid sloping to the sides, shorter than the abdomen; *Corium* long, posterior margin oblique; *Membrane* distinct, short, finely reticulated. *Sternum: Prosternum* with a longitudinal channel on each side of a thin middle keel; posterior margin, at the sides, oblique; *Mesosternum* trapeziform, convex; *Metasternum* in the middle, raised, oval, posteriorly produced into a xyphus. *Legs* long, slender:—first pair; *coxæ* cylindrical, about two thirds the length of the tibiæ; *thighs* slightly dilated as far as the groove, linear and curved outwards thence to the apex; the groove narrow, anterior, extending rather more than one third the length of the thigh, terminated by a large spine; *tibiæ* thin, curved; *tarsi* long, curved:—second and third pairs longer than the first, cylindrical; *coxæ* short, stout; *tarsi* very long, slender; *claws* thin, divergent.

Abdomen beneath, trigonal; the posterior margin of all the segments straight. *Connexivum* comparatively broad, projecting, reflexed. *Genital*

segments after the same type as *Nepidæ*, but the last segment is posteriorly obtuse. Gen. 1, *Ranatra*.

Family 2.—NEPIDÆ.

Long-oval, flat, thin. *Antennæ:* second joint produced laterally at the end into a long falcate process; third nearly as long as, and incumbent on, the second. *Eyes* moderate, reniform, prominent. *Rostrum* almost vertical, conical. *Pronotum* broad-trapeziform: the first two thirds with longitudinal callosities, the last third flat, incrassated at the sides; posterior margin slightly concave. *Scutellum* large, triangular. *Elytra* flat, as long as the abdomen, reticulated throughout; *Embolium* long, parallel, indistinct on the upper side; *Membrane* indistinctly separated from the Corium. *Sternum: Prosternum* posteriorly retuse, xyphus rounded; *Meso-* and *Metasternum* transverse. *Legs:* first pair; *coxæ* stout, not half the length of the thighs; *thighs* incrassated, suddenly smaller towards the apex; the groove wide; *tibiæ* curved; *tarsi* digitate:—second and third pairs longest, simple; *coxæ* subglobose; *tarsi* long and slender; *claws* thin.

Abdomen beneath, with a depressed middle keel; the first and second segments anchylosed, so that there appear to be but five abdominal segments; the posterior margin of each concave above, angularly excised beneath, except the last. *Genital segments* in ♂ and ♀ outwardly of the same form. Above, in the middle of the last abdominal segment, lies a small, triangular, pointed plate, which (according to Flor) is the only visible part of the third genital segment, the rest of its development being under the second segment for nearly its whole length; the second segment, large, subtriangular, cleft up the middle, but not parted, projects far beyond the points of the last abdominal segment, and forms the apex of the abdomen, a spinose point lying on each side of the terminal filaments; beneath, this segment appears as two long, narrow, triangular lateral plates, grooved on their inner margins, the space between them filled by a long, triangular, convex plate, whose side margins fit into the groove of the side plates; the first segment and the generative organs are covered by the second segment. Gen. 1, *Nepa*.

Section 4.—*NOTONECTINA.*

Notonectides, p., *Leach; Am. et Serv.*
Notonectici, p., *Burm.*
Notonectidæ, p., *Westw.*
Notonectidea, Notonectæ et Pleæ, *Fieb.*
Notonectica, *Flor.*

Posteriorly, laterally compressed; longitudinally convex. *Head* large, transverse, convex, rounded in front; *Crown* and *Face* not separated. *Antennæ* 4-jointed. *Eyes* large, triangular, posterior. *Rostrum* free, 3 or 4-jointed. *Elytra* corneous or pergamentous throughout; *Embolium* linear, oblique or horizontal; *Membrane* ample and saddle-formed, or wanting. *Legs:* first pair inserted on the posterior margin of the prosternum; *tarsi* 2 or 3-jointed. These insects swim with their backs downwards, and move rapidly by means of their long hind legs.

Family 1.—NOTONECTIDÆ.

Long-oval. *Head* large, with the eyes almost reniform, curved under. *Antennæ:* first joint short, stout; second long, very stout; third in length subequal, narrower, cultrate, with long capitate hairs; fourth very short, conical. *Eyes* approximate. *Rostrum* 4-jointed. *Pronotum* hexagonal, subtrapeziform. *Scutellum* large. *Elytra* pergamentous; *Embolium* long, linear, horizontal; *Membrane* indistinctly separated from the corium, gradually thinner, folded longitudinally; apex deeply notched. *Legs* subequal; anterior *tibiæ* dilated; posterior pair longest, and with their tarsi long ciliated; *tarsi* all 2-jointed.

Abdomen with a ciliated middle keel. Gen. 1, *Notonecta.*

Family 2.—PLEIDÆ.

Ovate, broadest in front, very convex longitudinally, the abdomen laterally compressed and angulated. *Head* broad, curved under. *Antennæ:* first and second joints very short; third long, broad-fusiform; fourth small, clavate, inserted obliquely below the apex of

the third. *Eyes* remote, slightly prominent. *Rostrum* 3-jointed, short, obtuse; the first joint nearly covered by the labrum and cheek-plates. *Pronotum* convex, transverse, obscurely hexagonal. *Elytra* corneous; *Corium*, the posterior margin of each elytron meeting each other in a straight longitudinal line; *Embolium* linear, placed obliquely on the anterior angles; *Membrane* wanting. *Sternum* visible horizontally only as the edges of thin plates between the deeply inserted coxæ, laterally as triangular plates. *Legs* all formed alike; *coxæ* large; *fulcra*, third pair angulated; *thighs* gradually smaller to the apex; *tarsi* trimerous. Gen. 1, *Plea*.

Section 5.—*CORIXINA*.

Notonectici, p., *Burm.*
Notonectidæ, p., *Westw.*
Corisides, *Am. et Serv.*
Corisoidæ, *Fieb.*
Corisidea, *Fieb., Flor.*
Corisæ, *Fieb.*

Head scutellate, greatly curved under, so that the apex rests between the anterior coxæ, the posterior margin overlying the pronotum. *Antennæ* simple, 3 or 4-jointed, inserted under the margins of the head. *Eyes* large, remote. *Rostrum* short, unarticulated, concealed; *labrum* triangular, transversely wrinkled; *labium* smooth, covered by the labrum. *Pronotum* transverse triangular. *Scutellum* 0, or short, triangular. *Elytra* pergamentous throughout; *Embolium* long, linear; *Clavus* broad, triangular; *Membrane* indistinctly separated from the corium; nerveless except one fine, long inner nerve. *Wings* ample, very delicate. *Sternum* with *Scapulæ*, *Pleuræ*, and sometimes *Parapleuræ*; *Prosternum* anteriorly bilobed; *Metasternum* produced into a triangular xyphus. *Legs*: each pair of different form; first pair inserted posteriorly on the prosternum, stout, short; the *tarsi* monomerous, broad, cultrate, differing in the sexes, pectinated, with strong hairs beneath, and one small setaceous, apical claw; second pair, the *thighs* longest, simple, *tarsi* 1 or 2-jointed, with two long claws; third pair, *tarsi* long, dilated, 2-jointed, long-ciliated, and with one apical claw.

Abdomen flat above, convex beneath: *Connexivum* at first narrow, gradually widened posteriorly, much reflexed, the end projecting. In the ♂ the last four segments have irregular, unsymmetrical margins; in the ♀ they are regular and parallel, the posterior margin of the 6th concave above, produced triangularly with sinuate sides beneath. *Genital segments:*—The visible parts consist, in the ♀, of two short, contiguous, triangular plates, not extending laterally the whole breadth of the last abdominal segment; beyond these extend two long, broad, flat, oval, side pieces, touching each other posteriorly, reflexed in the same degree as the connexivum, projecting as a continuation of it, and forming the apex of the body: these plates are equally visible on the underside and occupy the whole space beyond the abdominal segments, except that in the middle, close to the base, a small triangle juts through between them. In the ♂ the visible parts are formed as in the ♀, except that the side plates are not so regular, and the posterior separation is rarely in the middle. The rest of the genital segments and the generative organs are concealed by the plates mentioned.

Family 1.—CORIXIDÆ.

Oblong, subparallel, convex above.

Head transverse, convex, triangular, hindwardly pointed, sides sinuate, seen from above (including the eyes) lunate. *Antennæ* 4-jointed; first and second joints stout, cylindrical; third stout, clavate, as long as the first and second together; fourth subulate. *Pronotum* transverse, triangular, pointed hindwardly. *Scutellum* 0. *Metasternum* furnished with *parapleuræ*; the *pleuræ* with a distinct sutural junction. *Tarsi*, first and second pairs monomerous. Gen. 1, *Corixa;* 2, *Cymatia.*

Family 2.—SIGARIDÆ.

Elliptic, depressed.

Head triangular, sides subangulated; seen from above obtusely triangular. *Antennæ* 3-jointed; first and second joints subcylindrical; third, oblong, concave. *Pronotum* transverse, triangular, pointed anteriorly. *Scutellum* short triangular. *Metasternum* without parapleuræ; the pleuræ without suture. *Tarsi*, second pair 2-jointed. Gen. 1, *Sigara.*

Div. 1.—GYMNOCERATA.

Sub-Div. 1.—Geodromica.

Section 1.—*SCUTATINA.**

Family 1.—CYDNIDÆ.

Genus 1.—Sehirus, *Am. et Serv.*

Elliptic, more or less convex.

Head short, widest just before the eyes: *Face* rounded in front, concave through the sides being recurved; central lobe shorter than the side lobes, which join and enclose it, but leaving a notch in front. *Antennæ:* the tubercle generally near the eyes, the joints after the 1st gradually thicker to the 4th; the 2nd and 3rd vary in relative length. *Eyes* small, rounded, projecting only a little beyond the margins of the head. *Ocelli* small, distant. *Rostrum* reaching to the middle or hinder coxæ, base in a short channel; 1st and 4th joints shorter, 2nd and 3rd of about equal length.

Thorax.—Pronotum transverse, subquadrangular, or subtrapezoidal, anterior angles much rounded; anteriorly deflected, with the margin very concave; sides marginate; hinder margin a little rounded, more so at the posterior angles. *Scutellum* large, triangular, at its base not so broad as the abdomen, and reaching beyond the inner posterior angle of the corium, a little constricted just before the rounded apex, which is suddenly deflected. *Elytra: Membrane* with 5 or 6 irregular, transparent nerves, which join together on the disk, and form irregular cells. *Sternum:—Prosternum* with a more or less deep rostral channel, and on each side a deep, transverse channel; *Mesosternum* with a slight, central keel. *Legs* strong; *hinder tibiæ* longest, all the *tibiæ* with very strong spines placed in rows; *tarsi*, 2nd joint very small.

Abdomen convex beneath; *Connexivum* narrow.

* Page 11.

Species 1.—Sehirus bicolor.

Cimex bicolor, *Lin.* F. S. 250, 936 (1761); S. N. i, 722, 55 (1767); *Scop.*? Ent. Carn. 122, 357 (1763); *De G.* Mém. iii, 268, 12 (1773); *Fab.* E. S. iv, 121, 161 (1794); S. R. 176, 109 (1803); *Don.* Brit. Ins. ix, 21, pl. 297 (1800); *Wolff*, Ic. Cim. 63, t. 7, fig. 60 (1801); *Panz.* F. G. 32, 11.

— nubilosa, *Harris*, Exp. Eng. Ins. 90, pl. 26, fig. 8 (1776).

Cydnus bicolor, *Fall.* Mon. Cim. 53, 2 (1807); Hem. Suec. 19, 2 (1829); *Hahn*, Wanz. i, 192, t. 31, fig. 99 (1831); *Zett.* Faun. Ins. Lap. i, 461, 1 (1832); Ins. Lap. 258, 1 (1840); *Burm.* Handb. ii, 374, 1 (1835); *Kolen.* Mel. Ent. iv, 63, 191 (1846); *Flor*, Rhyn. Liv. 1, 157, 3 (1860).

Pentatoma bicolor, *Le P. et Serv.* Enc. x, 58, 25 (1825).

Tritomegas — *Am. et Serv.* Hém. 98, 1 (1843); *Sahlb.* Geoc. Fenn. 21, 1 (1848).

Sehirus — *Fieb.* Europ. Hem. 368, 7 (1861).

Black, shining, finely punctured; a spot on the anterior lateral margin of the *pronotum*, a larger dentate one on the base, and another similar one at the apex of the anterior margin of the *corium*, white, the upper side of the *tibiæ* also white.

Head subtrapeziform; *Crown* convex, with few punctures; *Face*, side lobes widely recurved; anterior margin with a wide but shallow notch. *Antennæ* black, pilose; 2nd joint half the length of the 3rd; 3rd, 4th, and 5th in length subequal. *Eyes* rounded rather prominent. *Ocelli* small, reddish. *Rostrum* black, reaching a little beyond the middle coxæ; 2nd and 3rd joints of equal length; rostral channel shallow.

Thorax.—*Pronotum* transverse, anteriorly and posteriorly deflected; the sides gradually convergent and rounded to the front; anterior margin very concave, lateral margins delicately reflexed, posterior margin slightly rounded. Across the centre of the disk is a shallow transverse furrow, deeper at the ends, which do not reach the sides; before and adjoining this furrow is a transverse unpunctured space, narrow in the middle and widened at each end anteriorly; from the anterior angles a large white spot extends about

half way down the sides; hinder angles raised, sometimes posteriorly with a small white spot. The punctures are not so contiguous as on the scutellum, but in the central furrow they form slight wrinkles. *Scutellum;* the extreme deflected apex punctureless. *Elytra: Corium;* anterior margin reflexed; at the base a large, white, irregular, dentate patch, each end of which extends to the *clavus;* at the posterior outer angle a similar smaller patch extends half across the corium; posterior margin sinuate; *Membrane* whitish or fuscous. *Sternum:—Prosternum* coarsely, *Meso-* and *Metasternum* moderately but sparsely, punctured. *Legs* black; *tibiæ* on the outside, except at the base and apex, white; *tarsi* black.

Abdomen, beneath, very delicately and sparsely punctured; *Connexivum* rather wide, alternately black and white.

Length, 2½—3¾ lines.

Not uncommon round London in sandy places, among grass and herbage, in the spring.

Species 2.—SEHIRUS DUBIUS.

CIMEX DUBIUS, *Scop.* Ent. Carn. 121, 355 (1763); *Wolff*, Ic. Cim. 64 t. 7, fig. 61 (1801).
— ALBOMARGINATUS, *Schrk.* Enum. Ins. Aust. 531, 275 (1781).
— ALBOMARGINELLUS, *Fab.* E. S. iv, 123, 167 (1794); S. R. 178, 120 (1803).
CYDNUS ALBOMARGINATUS, *Fall.*? Hem. Suec. 19, 4 (1829); *Ramb.* Faun. And. ii, 111, 2 (1842).
— DUBIUS, *Hahn*, Wanz. i, 191, t. 31, fig. 98 (1831); *Curt.* B. E. ii, 74 (1826); *Flor*, Rhyn. Liv. i, 160, 5 (1860).
— ALBOMARGINELLUS, *Burm.* Handb. ii, 374, 2 (1835); *Kolen.* Mel. Ent. iv, 64, 192 (1845).
SEHIRUS — *Am. et Serv.* Hém. 97, 2 (1843); *Sahlb.* Geoc. Fen. 21, 2 (1848).
— DUBIUS, *Fieb.* Europ. Hem. 368, 5 (1861).

Blue-black, with a violet tinge, shining, finely punctured, the lateral margins of the *pronotum* and the anterior margin of the *elytra* narrowly yellowish.

Head broad, short, trapeziform before the eyes; *Crown* rather convex, with few punctures; *Face;* side lobes widely recurved; the anterior margin almost without a notch. *Antennæ* black or piceous,

pilose; 2nd and 3rd joints in length subequal, larger than the 1st; 4th and 5th subequal in length and breadth, but longer and thicker than the 2nd and 3rd. *Eyes* rounded, rather prominent. *Ocelli* very small, red. *Rostrum* piceous, reaching to the middle coxæ, 3rd joint larger than the 2nd; the rostral channel shallow.

Thorax.—Pronotum transverse, quadrangular, gradually rounded to the front, slightly convex, anteriorly and posteriorly deflected; anterior margin very concave: lateral margins narrowly incrassated, yellowish; posterior margin gradually rounded. Across the centre of the disk is a shallow, transverse furrow, each end (which does not extend to the side) being much deeper; before and adjoining this furrow is a transverse, smooth, unpunctured space, narrow in the middle, wider at the ends, extending almost to the anterior angles of the pronotum. *Scutellum:* the sides of the apex incrassated and, with the deflected portion, unpunctured. *Elytra: Corium;* the punctures closer than those on the pronotum and scutellum; the anterior margin incrassated, slightly reflexed, yellowish; posterior margin slightly sinuate; *Membrane* fuscous. *Sternum* finely punctured: *Prosternum;* the rostral channel shallow. *Legs* and *tarsi* black.

Abdomen beneath very convex, delicately punctured; *Connexivum* spotted with yellowish.

Length, 2¼—3 lines.

Uncommon. Pangbourne (*Wollaston*); Portland (*Dale*).

Species 3.—Sehirus biguttatus.

Cimex biguttatus, *Lin.* F. S. 250, 935 (1761); S. N. i, 722, 54 (1767); *Scop.* Ent. Carn. 122, 356 (1763); *Fab.* E. S. iv, 122, 164 (1794); S. R. 178, 116 (1803); *Panz.* F. G. 32, 13.

Cydnus — *Fall.* Mon. Cim. 53, 3 (1807); Hem. Suec. 19, 3 (1829); *Hahn,* Wanz. i, 169, t. 26, fig. 88 (1831); *Zett.* Faun. Ins. Lap. 1, 461, 2 (1832); Ins. Lap. 258, 2 (1840); *Burm.* Handb. ii, 374, 3 (1835); *Kolen.* Mel. Ent. iv, 65, 193 (1846); *Flor,* Rhyn. Liv. i, 162, 6 (1860).

Tritomegas — *Am. et Serv.* Hém. 98, 2 (1843); *Sahlb.* Geoc. Fen. 22, 2 (1848).

Sehirus — *Fieb.* Europ. Hem. 367, 4 (1861).

Black, slightly convex, shining, deeply punctured; the entire exterior margin (except of the head), and a spot on the *corium*, yellowish.

Head small, coarsely punctured; *Crown* rather convex, front depressed; *Face;* side lobes much rounded in front, yet leaving the anterior notch very wide; anterior margin a little reflexed. *Antennæ:* 2nd joint a little shorter than the 3rd; 5th fusiform, a little longer than the 4th, and as long as the 2nd and 3rd together. *Eyes* small, not prominent. *Ocelli* very small, black. *Rostrum* brown, reaching to the middle coxæ; 3rd joint as long or longer than the 2nd.

Thorax.—Pronotum gradually narrower to the front, slightly convex and anteriorly and posteriorly deflected; anterior margin very concave; lateral margins incrassated, yellowish; posterior margin straight, but rounded abruptly towards the lateral margins. Across the centre of the disk a deep, wide, transverse furrow, which does not extend to the sides; before and adjoining this furrow a transverse unpunctured space. The punctures are not close together, and are finer on the posterior portion of the disk. *Scutellum:* punctures equally fine throughout; apex concave, almost unpunctured. *Elytra: Clavus* and *Corium* with punctures similar to those on the scutellum; nerves smooth. *Corium;* the anterior margin incrassated, whitish; in the centre a somewhat oval, whitish, unpunctured spot; posterior margin straight; *Membrane* deep brown. *Sternum* coarsely punctured, with 3 transverse channels, the fore and hinder ones deepest; *Prosternum* with a shallow rostral channel. *Legs* black; *tarsi* piceous.

Abdomen beneath very finely punctured; *Connexivum* narrow yellowish.

Length, 3 lines.

Not common round London; spring and autumn.

Species 4.—Sehirus morio.

Cimex morio, *Lin.* F. S. 250, 932 (1761); S. N. 1, 722, 51 (1767); *Fab.* E. S. iv, 124, 171 (1794); *Wolff,* Ic. Cim. 67, t. 7, fig. 64 (1801).

CYDNUS MORIO, *Fab.* S. R. 184, 3 (1803); *Panz.* F. G. 32, 15; *Fall.* Mon. Cim. 52, 1 (1807); Hem. Suec. 18, 1 (1829); *Hahn*, Wanz. 1, 263, t. 25, fig. 84 (*C. nigrita*) (1831); *Burm.* Handb. ii, 375, 6 (1835); *Ramb.* F. And. ii, 112, 3 (1842); *Flor*, Rhyn. Liv. i, 159, 4 (1860).

PENTATOMA — *Lep. et Serv.* Enc. x, 58 (1825).

SEHIRUS — *Am. et Serv.* Hém. 96, 1 (1843); *Sahlb.* Geoc. Fen. 20, 1 (1848); *Fieb.* Europ. Hem. 367, 2 (1861).

Black, slightly convex, shining, finely punctured.

Head broad, almost semicircular before the eyes; the *Crown* convex, lightly punctured, the front coarsely punctured. *Antennæ:* 1st joint short, piceous; 2nd dark yellow; 3rd black, about the same length as the 2nd; 4th and 5th black, in length subequal, but longer than the 3rd; the extreme tip of the 3rd and 4th, and the petiole of the 4th and 5th yellowish. *Eyes* prominent, somewhat pointed. *Ocelli* large, red. *Rostrum* brown or piceous, scarcely reaching to the middle coxæ, 2nd joint the longest.

Thorax.—Pronotum: lateral margins finely reflexed; hinder angles raised; on the disk, at a short distance from the anterior margin, a broad, transverse, unpunctured space, in form somewhat quadrangular, but with the anterior angles prolonged towards the anterior angles of the pronotum; the punctures are sharper, deeper, and wider apart than those on the head. *Scutellum* very slightly convex, the deflected apex slightly concave and almost punctureless. *Elytra: Corium;* the anterior margin reflexed; posterior margin slightly sinuate; *Membrane* fuscous brown, clearer at the base, or all whitish brown. *Sternum* coarsely punctured; 3 transverse femoral channels, the anterior and posterior being the deepest; *Prosternum;* the rostral channel shallow, widened in front, the sides terminating in a short, blunt process. *Legs: tibiæ* piceous, *tarsi* paler.

Abdomen very convex beneath, very minutely punc[illegible].

Length, $2\frac{1}{2}$—$3\frac{1}{4}$ lines.

Not common in the London district; taken in spring and autumn.

Species 5.—SEHIRUS ALBOMARGINATUS.

CIMEX ALBOMARGINATUS, *Fab.* E. S. iv, 123, 168 (1794); S. R. 179, 121 (1803); *Panz.* F. G. 33, 20; *Wolff*, Ic. Cim. 65, t. 7, fig. 62 (1801).

CYDNUS ALBOMARGINATUS, *Hahn*, Wanz. i, 167, t. 26, fig. 86 (1831); *Burm.* Handb. ii, 375, 4 (1835); *Ramb.* Faun. And. ii, 111, 2 (1842); *Schill.* Arb. and Verändl. 183, 33 (1844); *Kolen*, Mel. Ent. iv, 66, 194 (1846); *Flor*, Rhyn. Liv. i, 156, 2 (1860).

SEHIRUS — *Am. et Serv.* Hém. 97, 4 (1843).

GNATHOCONUS — *Fieb.* Europ. Hem. 366, 1 (1861).

Black, very convex above and beneath, shining; above very deeply but finely punctured; the lateral margins of the *pronotum* and *elytra* yellowish white.

Head very much deflected, nearly vertical, almost quadrate, rather longer than broad; *Face;* the anterior margin deeply notched; the margin of the side lobes and the apex of the short, narrow, central lobe slightly reflexed. *Antennæ:* basal tubercle small, nearer to the rostrum than the eyes; 1st and 2nd joints in length subequal, each larger than the 3rd; the 1st joint is piceous, the 2nd yellowish, the rest black, with the apex narrowly piceous. *Eyes* small, rather prominent. *Ocelli* small, black. *Rostrum* piceous, the base paler, reaching to the 2nd pair of coxæ.

Thorax.—Pronotum: the lateral margins yellowish white, very delicately reflexed; disk, towards each side with a slight fovea. *Scutellum;* the apex almost punctureless, above the deflexion concave. *Elytra: Corium* with the punctures deeper, wider apart, and more in rows than on the scutellum; anterior margin yellowish white; posterior margin straight: *Membrane* transparent, whitish. *Sternum* deeply, coarsely punctured, with three transverse channels, of which that on the prosternum is deepest; *Prosternum* with a wide rostral channel. *Legs* black; hinder *tibiæ* with finer spines than on the other tibiæ; *tarsi* piceous.

Abdomen beneath very convex, shining, smooth.

Length, 2—2½ lines.

Common in the London district, at the roots of grass, on dry banks, in spring and autumn.

Family 2.—ODONTOSCELIDÆ.

Genus 1.—Corimelæna, *White.*

(Mag. Nat. Hist. iii, 24 (1839).

Oval, very convex above.

Head much deflected, almost vertical, very broad, short, rounded in front, margin slightly reflexed, central lobe of the *face* scarcely so long as the side lobes. *Antennæ:* tubercle very small, inserted half way between the eye and the rostrum, and pointing directly inwards; 1st, 3rd, and 4th joints in length subequal; 2nd much shorter; 5th a trifle longer than the 4th, fusiform; the 4th and 5th thicker than the others. *Eyes* rather pointed and prominent. *Ocelli* small, distant, inserted close to the eyes. *Rostrum* reaching to the 2nd pair of coxæ, base in a shallow oval channel; 1st joint shortest, 2nd and 3rd of equal length, and longer than the 4th.

Thorax: Pronotum transverse, almost hexagonal, very convex, hinder angles much raised, within them, depressed; anterior margin straight as far as the sides of the head, then suddenly produced and deflected behind the eyes; sides much rounded, margins delicately reflexed; hinder and posterior angles rounded; posterior margin nearly straight. *Scutellum* neither so long nor so wide as the abdomen, the sides sinuate, being constricted close to the base. *Elytra* straight, the uncovered portion of the *corium* alone coriaceous, the rest membranous; *Membrane* with the (? 5) nerves scarcely perceptible. *Prosternum* divided in the centre, the plates raised over the rostrum and base of the head, forming a channel for the reception of the antennæ; on each side a deep, transverse channel. *Legs* short, strong; *tibiæ* outwardly channeled, the edges finely spined; *tarsi*, 2nd joint shortest, 3rd longest.

Abdomen convex above and beneath; *Connexivum* narrow.

Species 1.—Corimelæna Scarabæoides.

Cimex Scarabæoides, *Lin.* S. N. 1, 716, 4 (1767); *Fab.* E. S. iv, 89, 37 (1794); *Wolff*, Ic. Cim. 4, t. i, fig. 4 (1800).

Thyreocoris — *Schrk.* F. Boic. ii, 69, 1096 (1801); *Hahn*, Wanz. ii, 47, t. 45, fig. 141 (1834); *Kolen.* Mel. Ent. iv, 9, 128 (1846).

TETYRA SCARABÆOIDES, *Fab.* S. R. 143, 70 (1803); *Full.* Mon, Cim. 42, 3 (1807); Hem. Suec. 16, 6 (1829).
ODONTOSCELIS — *Burm.* Handb. ii, 385, i (1835); *Germ.* Zeits. i, 38, 3 (1839); *H. Schf.* Wanz. v, 34 (1839).
CORIMELÆNA — *White*, Mag. Nat. Hist. iii, 24 (1839); *Fieb.* Europ. Hem. 365 (1861).
COREOMELAS — *Am. et Serv.* Hém. 68, i (1843); *Sahlb.* Geoc. Fen. 17, 1 (1848); *Flor*, Rhyn. Liv, i, 150 (1860).

Black, metallic-shining, thickly punctured above and beneath.

Head: Antennæ and also the tubercle piceous. *Eyes* piceous. *Ocelli* black. *Rostrum* light brown.

Thorax.—Elytra; Membrane whitish. *Wings* whitish. *Tarsi* piceous.

Abdomen with extremely fine punctures.

Length, $1\frac{1}{4}$—$1\frac{3}{4}$ lines.

Scarce. Purley Downs, near Croydon, in spring, under fallen leaves; near Gloucester (*W. V. Guise*); Mickleham (*E. C. Rye*); on the sand-hills near Burnham (*W. Wilson Saunders*).

Genus 2.—ODONTOSCELIS, *Lap.*

Elliptic, broad, very convex.

Head very much deflected, very broad, convex, rounded to the front; *Face;* side lobes as long as the middle lobe. *Antennæ* inserted half way between the eye and the rostrum in a direct line, 1st, 4th, and 5th joints in length and breadth subequal, 2nd shorter, 3rd two thirds the length of the 2nd, the 5th fusiform. *Eyes* small, subreniform. *Ocelli* small, distant. *Rostrum* reaching to the 3rd pair of coxæ, the base in a deep channel, of which the sides are much produced; 2nd joint longest, 3rd joint rather longer than the 4th, but shorter than the 1st.

Thorax.—Pronotum quadrangular, transverse, convex; anteriorly wider than the head and eyes, anterior angles obtusely produced; lateral margins rounded in front, near the hinder angle with a notch; hinder angles broadly rounded; posterior margin straight. *Scutellum* very convex, as long as the abdomen and nearly as wide, leaving only a small portion at the side thereof and of the base of the corium visible. *Elytra:* the uncovered portion of the *corium* alone coriaceous, the rest membranous; *Membrane* with 5 long

nerves. *Sternum: Prosternum* with a deep rostral channel, of which the end in front is widened and the raised margin extended to the base of the antennæ, forming a channel for their reception; *Meso-* and *Metasternum* with the rostral channel shallower; *Pro-* and *Mesosternum* with a deep transverse channel. *Legs*, short, strong; *thighs* compressed; *tibiæ* with short, fine spines; on the outer side a channel, deepest in the first pair; *tarsi*, 2nd joint short; all the joints hairy beneath.

Abdomen convex above and beneath; *Connexivum* moderate.

Species 1.—Odontoscelis fuliginosus.

Cimex fuliginosus, *Linn.* S. N. i, 716, 8 (1767); *Fab.* E. S. iv, 90, 42 (1794); *Wolff*, Ic. Cim. 50, t. 5, fig. 47 (1801).

— litura, *Fab.* E. S. iv, 90, 43 (1794).

Tetyra fuliginosa, *Fab.* S. R. 139, 50 (1803); *Panz.* F. G. 112, 14; *Fall.* Mon. Cim. 42, 2 (1807); Hem. Suec. 15, 5 (1829); *Curt.* B. E. xv, fig. 685 (1838).

— litura, *Fab.* S. R. 139, 51 (1803).

Scutellera fuliginosa, *Lat.* Gen. iii, 114, 4 (1807); *Lam.* Hist. Nat. iii, 491, 3 (1816); *Schill.* Arb. u. Veränd. 160 (1843).

Tetyra carbonaria, *Zett.* Act. Holm. 70, 19 (1819); *Fall.* Hem. Suec. 13, 3 (1829).

Odontoscelis fuliginosus, *Lap.* Hém. 74 (1832); *Burm.* Handb. ii, 385, 3 (1835); *H. Sch.* Nom. Ent. i, 53 & 88 (1835); *Am. et Serv.* Hém. 69, 1 (1843); *Kolen.* Mel. Ent. iv, 5, 122 (1846); *Flor*, Rhyn. Liv. i, 152 (1860); *Fieb.* Europ. Hem. 378, 2 (1861).

Ursocoris fuliginosa et litura, *Hahn*, Wanz. ii, 49 & 50, t. 46, fig. 142 & 143 (1834).

Arctocoris — *Germ.* Zeits. i. 47, 1, (1839).

Fusco-luteous, black-punctured, slightly shining, covered with very short, depressed pile, the circumference with strong, projecting, yellow hairs. Underside pitchy black, finely pilose, punctured.

Head black above and beneath. *Antennæ* black or piceous. *Ocelli* very small, red. *Rostrum* luteous, the last two joints piceous.

Thorax.—Pronotum black in front, more or less luteous behind, on the posterior half a central fine, lighter, longitudinal line, and sometimes on each side of this another similar, but ill defined; sides coarsely punctured; broadly incrassated, the incrassated portion widest in front, bounded inwardly by a deep, narrow, longitudinal, bent channel, in the middle of which is a deep fovea; on the anterior third of the disk two transverse, lobate, scarcely raised, black spaces, of which the apex does not reach the centre, and the base rests upon the longitudinal channel. *Scutellum* luteous, more or less variegated with small black marks, the punctures wider apart than on the pronotum, the base usually black, towards the sides with a deep fovea; in the centre a narrow, pale luteous line extends nearly the whole length, wider before its termination, and then bordered on each side with a short, thick, black line; half way between the central line and the side, a thick, black line extends from the base to beyond the middle, ceasing abruptly; this line is generally bordered with pale luteous, but it is sometimes broken into two or three pieces; sometimes the ground colour of the *scutellum* is luteous almost without markings, at other times a piceous shade prevails. *Elytra:* the small uncovered portion of the *corium* piceous or luteo-piceous. *Sternum* black, finely punctured. *Legs: Coxæ* luteous; *thighs* and *tibiæ* piceous or black; *tarsi* piceous.

Abdomen piceous, darker at the sides; *Connexivum* alternately black and luteous. Underside pitchy-black, punctured, shining, finely haired; the segments drawn up in the centre; in the ♂, on the 4th and 5th, on each side of the middle, two, conjoined, transverse, large, oval, dull spots with transverse lines of golden hairs.

Length, 3—3½ lines.

Deal.

Family 3.—SCIOCORIDÆ.

Genus 1.—Sciocoris, *Fall.*

Egg-oval, slightly convex above, more convex beneath.

Head almost flat, semi-ovate; *Face;* central lobe narrow, shorter than the side lobes which meet in front of it; anterior margin with a scarcely perceptible notch. *Antennæ* rather short, slender; tubercle small, pointed; 1st joint stout, short; 2nd long; 3rd varies

in length; 4th and 5th of equal length, each longer than the 2nd. *Eyes* small, rounded, prominent. *Ocelli* small, distant. *Rostrum* reaching to the 3rd pair of coxæ, very wide beyond the base; 2nd joint long, 3rd and 4th very short, of equal length; the sides of the rostral channel a little produced and rounded in front.

Thorax.—Pronotum transverse, subquadrangular, very slightly convex, in front wider than the head, straight behind the head, but with the anterior angles suddenly produced and then cut off straight behind the eyes; sides produced into a thin plate, almost straight, but gradually narrower, and rounded towards the obtuse anterior angles; posterior margin nearly straight, but towards the hinder angles broadly rounded, the angles themselves acute; posteriorly the disk is raised, especially within the hinder angles. *Scutellum* half the length of the abdomen, slightly convex, subtriangular, at the base much narrower than the abdomen, apex broadly rounded; in the centre an indistinct keel. *Elytra: Corium;* all the margins rounded; *Membrane* with 5 long nerves. *Sternum* with a shallow rostral channel and 2 deep transverse channels for the fore and middle thighs. *Legs* short, strong; *tibiæ*, outer side flat, the margins dentate; *tarsi* strong, 1st and 3rd joints of equal length, 2nd very short.

Abdomen convex beneath; *Connexivum* very broad, not covered by the elytra.

Species 1.—Sciocoris terreus.

Cimex terreus, *Schrk.* Faun. Boic. sp. 1109 (1801).
— umbrinus, *Wolff*, Ic. Cim. 142, t. 14, fig. 136 (1804); *Panz.* F. G. 93, 15.
Cydnus — *Fall.* Mon. Cim. 54, 5 (1807).
Sciocoris — *Fall.* Hem. Suec. 21, 1 (1829); *Hahn*, Wanz. 1, 195, t. 31, fig. 100 (1831); *H. Sch.* Nom. Ent. 1, 55 & 91 (1835); *Burm.* Handb. ii, 373, 5 (1835); *Ramb.* Faun. And. ii, 120, 4 (1842); *Am. et Serv.* Hém. 120, 1 (1843); *Sahlb.* Geoc. Fen. 23, 1 (1848); *Fieb.* Europ. Hem. 358, 10 (1861).
— umbrina, *Flor*, Rhyn. Liv. i, 111, 1 (1860).
— terreus, *Fieb.* Europ. Hem. 361, 18 (1861).

Dull, pale luteous, more or less shaded with brown, thickly covered with fine black punctures.

Head brown, margin delicately reflexed; *Crown* with a pale luteous central keel, which joins the base of the central lobe of the face; on each side of the keel darker brown, interrupted by a pale curved line; *Face;* central lobe raised, pale luteous, darker at the sides. Underside strongly and thickly black-punctured, especially in front. *Antennæ:* 3rd joint two thirds the length of the 2nd; 1st piceous; 2nd dark yellowish; 3rd and 4th piceous, with the base and tip dark yellowish; 5th piceous, the petiole pale. *Eyes* black, moderate, projecting as far as the outer angle of the pronotum. *Ocelli* red, shining. *Rostrum* luteous, the last two joints black.

Thorax.—Pronotum with dark clouds of brown, sometimes hindwardly clearer; sides broadly pale luteous, margins delicately reflexed; in the centre a very slight tranverse, waved line, behind which the disk is a little depressed; within the hinder angles a distinct callus. *Scutellum* almost as long as the corium, the sides gradually receding to the broadly rounded apex; the centre raised into a low, broad keel, exterior to which, on each side, is a depression; at the base, near the sides, two whitish, shining, slightly raised spots, outwardly and inwardly shaded with brown; the inner shade extends to the centre of the base, but is interrupted by a faint yellowish line running diagonally to the keel. *Elytra: Corium;* the nerves raised; towards the centre two or three small black spots; *Membrane* brown, with darker nerves. *Sternum:* centre and sides broadly black; *prosternum* strongly black-punctured. *Legs* luteous; *thighs* beneath, with brown punctures, which tend to form 2 or 3 irregular bands; *tibiæ;* spines black; *tarsi* piceous, the 1st joint paler.

Abdomen beneath convex, strongly, distantly brown-punctured, rufo-luteous, centre paler, faintly bordered with rufous; on each side of the centre, but distant from it, a broad, irregularly defined, black band, gradually narrower to, and ending on the 6th segment; within the limits of this band the 1st and 2nd segments are quite black (the posterior margins excepted); on the middle of the 6th segment a large subquadrangular, black spot, which does not reach to the end of the longitudinal band; or the under side is piceous, with central and lateral luteous lines; *Stigmata* black, with a pearly-white spot and a brown shade attached to its inner side; *Connexivum* above and beneath alternately broadly brown and luteous.

Length, 2½—3 lines.

Not common. Sand-hills at Deal, in spring and autumn.

Family 4.—EURYGASTRIDÆ.

Genus 1.—Eurygaster, *Lap.*

Broad, oval, convex.

Head deflected, broad, convex, triangular, rounded in front, the central lobe of the *face* not elevated. *Antennæ* slender, gradually thicker from the base upwards, inserted near the eyes; 1st joint short; 2nd curved; 2nd and 4th longer than the 1st; 3rd shorter; 5th longest, subfusiform. *Eyes;* the portion which is above the lateral margin of the head, triangular, convex. *Ocelli* very small, distant. *Rostrum* reaching to the 3rd pair of coxæ; the base in a channel, narrow in front and very wide and oval behind, where also the sides are produced; 2nd joint the longest.

Thorax.—Pronotum very convex, hexagonal, wider than long, anteriorly narrow, posteriorly very wide; anterior margin rather longer than the width of the head, concave between the eyes and nearly straight behind them; lateral margins nearly straight or rounded, delicately reflexed; hinder and posterior angles much rounded; posterior margin straight, with a short furrow from within the hinder angles. *Scutellum* convex, with the base more raised, as long as the abdomen, but not so wide, leaving a broad portion of the elytra and abdomen uncovered; sides straight, posteriorly broadly rounded; the disk in the centre with a short keel. *Elytra:* anterior margin nearly straight; *Corium;* the uncovered portion coriaceous, widest at its base, gradually narrower till it meets the scutellum at the end of the straight part of its margin; the covered portion membranous; *Membrane* with many (15—20) long nerves. *Sternum:—Prosternum* divided in the centre and produced on each side of the rostral channel into a thin plate, which is rounded off and raised at the sides and in front, forming, with the base of the head, a channel in which the antennæ lie when at rest. *Legs* short, strong; *thighs* flattened; *tibiæ* (especially the 1st pair) angulated, the margins raised and set with very short spines or teeth; *tarsi* hairy beneath; the 2nd joint shortest.

Abdomen ovate, rather convex beneath; the segments shorter in the centre than at the sides, their posterior margins very concave, and that of the last segment deeply cut out for the reception of the

genital segments, which fill the entire space so formed. Of the *Genital segments* beneath; in the ♂ only one is visible, the surface is varied with slight elevations, the posterior margin concave in the centre, and thence sinuate to the sides: in the ♀ 3 segments are seen, the first 2 forming transverse, narrow, overlapping plates, of which the posterior margin in the centre is slightly notched, and thence rounded to the sides; the third, on the posterior margin, is in the centre sharply notched, and thence continued nearly straight to the points of the last abdominal segment. *Connexivum* horizontal, much rounded and widened posteriorly, and not covered by the elytra or scutellum.

Species 1.—EURYGASTER MAURUS.

CIMEX MAURUS, *Lin.* F. S. 246, 913 (1761); *Scop.* Ent. Carn. 120, 352 (1763); Lin. S. N. 1, 716, 5 (1767); *Rossi*, F. E. ii, 227, 1290 (1790); *Fab.* E. S. iv, 87, 30 (1794); *Wolff*, Ic. Cim. 135, t. 13, fig. 129 *a*, *b*, *c*, *d* (1804).

THYREOCORIS AUSTRIACA, *Schrank*, F. B. ii, 68, 1095 (1801).

TETYRA MAURA et PICTA, *Fab.* S. R. 136, 36 & 38 (1803).

— — *Fall.* Mon. Cim. 41, 1 (1807); Hem. Suec. 12, 2 (1829); *Burm.* Handb. ii, 390, 3 (1835); *H. Schf.* Nom. Ent. i, 53 & 89 (1835); *Germ.* Zeits. i, 73, 3 (1839); *Ramb.* Faun. And. ii, 100, 5 (1842).

SOUTELLERA MAURA, *L. Duf.* Rech. Hém. 26 (1833).

BELLOCORIS PICTUS, *Hahn*, Wanz. ii, 45, t. 45, fig. 140 (1834).

ODONTOTARSUS MAURUS et PICTUS, *Spin.* Hém. 363, 4 & 5 (1837).

EURYGASTER — *Am. et Serv.* Hém. 53, 2 (1843); *Sahlb.* Geoc. Fen. 15, 1 (1848); *Flor*, Rhyn. Liv. i, 85, 1 (1860); *Fieb.* Europ. Hem. 1, 370, 3 (1861).

— MAURA, *Kolen.* Mel. Ent. iv, 10, 129 (1846).

Varies in colour from fulvous brown without markings to luteous with stripes and shades of brown; smooth, slightly shining.

Head deeply punctured above and beneath, central lobe of the *face* as long as the side lobes, narrowed in front. *Antennæ* yellowish-red, 4th joint piceous towards the tip, 5th piceous or black, 4th and 5th with very short hairs. *Rostrum* luteous, the last 2 joints piceous or black.

Thorax.—Pronotum deeply punctured like the head; sides nearly

straight to the hinder angle; on the first third of the disk an indistinct transverse sinuated line; in the centre a faint longitudinal line. *Scutellum* at the base crenate-punctate, the rest with finer punctures than the pronotum; close to and touching the pronotum are two distant, small, ovate, whitish, shining nodules; the central keel very short and ill defined. *Elytra:* the uncovered portion punctured like the scutellum. *Sternum:—Prosternum* black-punctured, especially towards the sides; *Meso-* and *Metasternum* finer and more sparsely punctured. *Legs* luteous or reddish; *thighs* beneath with black punctures in rows; *tibiæ* with a row of connected black punctures on the inner side; *tarsi* concolorous with the tibiæ, claws and pulvilli rather darker.

Abdomen above black, smooth; beneath luteo-ferrugineous, delicately black punctured; *Connexivum* horizontal, the upper side deflected, alternately broadly black and fulvous, coarsely punctured.

Length, 4—5 lines.

In the lighter-coloured examples the head and pronotum are traversed longitudinally by dark-brown stripes; of these, on the *pronotum*, one on each side of the pale central line is the more conspicuous: the *scutellum* is also more or less clouded with brown, leaving three clear subovate patches; the largest of these reaches from the apex nearly half the length upwards, the others are placed above this, but more towards the sides.

Scopoli ('Ent. Carn.', p. 120), remarks that in all the varieties the colouring of the insect beneath is always the same. "Subtus autem in omnibus hisce meis varietatibus color unus et idem, nempe ferrugineus, punctis fuscis ubique variegatus."

According to Léon Dufour this species is common in France upon the ears of wheat, which it pierces and sucks while they are in a green state.

Folkestone, July to September.

Species 2.—Eurygaster Hottentottus.

Cimex Hottentotta, *Fab.* E. S. iv, 87, 31 (1794); *Panz.* F. G. 111, 7.
Thyreocoris cucullata, *Schrk.* F. B. ii, 68, 1094 (1801).
Tetyra Hottentotta, *Fab.* S. R. 136, 37 (1803); *Burm.* Handb. ii, 390, 2 (1835); *H. Schf.* Nom. Ent. 1, 53 (1835); *Germ.* Zeits. 1, 73, 2 (1839); *Ramb.* Faun. And. ii, 101, 6 (1842).

TETYRA NIGRA, *Fab.* S. R. 136, 39 (1803).
CIMEX MAURUS, *Wolff*, Ic. Cim. 135, t. 13, fig. 129 *b* (1804).
EURYGASTER HOTTENTOTTUS, *Lap.* Hém. 69 (1832).
BELLOCORIS MAURUS, *Hahn*, Wanz. ii, 44, t. 45, fig. 139 (1834).
EURYGASTER HOTTENTOTTUS, *Am. et Serv.* Hém. 53, 1 (1843); *Fieb.* Europ. Hem. 369, 2 (1861).
— HOTTENTOTA, *Kolen.* Mel. Ent. iv, 12, 131 (1846).

Very broad throughout, slightly shining. Varies in colour from brown-ochreous to black, finely punctured all over, still finer on the *scutellum*, the punctures either concolorous or black.

Head wide; *Face;* the central lobe not so long as the side lobes, which meet in front and enclose it.

Thorax.—Pronotum; the sides gently rounded, at the hinder angles very much rounded; on the 1st third of the disk a delicate transverse line which does not reach the sides, before this line and towards its ends are usually two, nearly smooth, angulated spaces: in some specimens these latter characters are not present. *Scutellum;* the raised basal portion crenate-punctate; behind this is the central keel, broad and dwarf, but distinct, ending at about $\frac{2}{3}$rds of the length of the *scutellum*, the disk sloping thence roof-like (not convex) to the sides.

Abdomen.—Connexivum rather strongly punctured.

Length, 6 lines.

Rare: a single specimen, captured casually by Mr. Ernest Adams, is of the brown-ochreous type; the *antennæ* yellow, with the 4th joint piceous towards the apex, and the 5th joint black, except the base, which is narrowly yellow; the base of the *pronotum* is narrowly black, the colour curving upwards at the junction of the hinder and posterior margins, widening and forming two broad, out-curving bands, which suddenly stop before they reach the centre of the disk; exterior to these, within each hinder angle, is a distinct black spot; there is a similar spot on the base of the *Corium*, and on its sides two black lines. *Connexivum* with indistinct dark spots.

This species is at once distinguished from *E. maurus* by its greater size, and by the central lobe of the face not reaching the anterior margin.

Family 5.—ÆLIIDÆ.

Genus 1.—Ælia, *Fab.*

Head triangular, elongated, curved, thick. *Antennæ* slender, flattened; tubercles small, appressed, inserted near, but anterior to each eye, pointing obliquely inwards. *Eyes* round, small, but rather prominent. *Ocelli* very small, distant. *Rostrum* long, slender, 2nd joint the longest, 3rd and 4th of about equal length, shorter than the first; rostral channel deep, wide in front, the sides much produced.

Thorax.—Pronotum hexagonal, convex, hinder sides short, much rounded. *Scutellum* more than half the length of the abdomen, but not nearly so wide, sides slightly sinuate, end rounded. *Elytra: Corium* with the posterior margin rounded; *Membrane* with 7 long nerves. *Sternum* with a rostral channel; *Prosternum* on each side with a shallow transverse channel; the anterior margin is divided in the centre, and produced into 2 thin plates over the base of the head, forming a channel for the antennæ when at rest. *Legs* moderate; *thighs* compressed; *tibiæ* outwardly flattened, the margins reflexed; *tarsi;* 1st joint longer and stouter than the 3rd; 2nd joint shortest.

Abdomen ovate, convex beneath; *Connexivum* horizontal, narrow, a little wider on the 6th segment. The *genital segments* in the ♂ are not visible on the upper side, but in the ♀ they project beyond the last abdominal segment, the posterior margin of the last being nearly straight.

Species 1.—Ælia acuminata.

Cimex acuminatus, *Lin.* F. S. 251, 939 (1761); S. N. 1, 723, 59 (1767).
Ælia acuminata, *Curt.* B. E. xv, pl. 704 (1838).
— neglecta, *Dall.* Cat. Hem. 1, 223, 3 (1851).
— pallida, *Küst.* Stett. Ent. Zeit. 13, 394, 4 (1852); *Flor,* Rhyn. Liv. i, 121, 2 (1860); *Fieb.* Europ. Hem. 352, 5 (1861).

Elliptic, narrow and pointed in front, flavous or ochreous, with a green tinge, thickly and finely black-punctured, and down the centre of the insect a black stripe, gradually widening as far as

the base of the *pronotum*, and then converging to a point at the end of the *scutellum*, a strong, raised, yellow line being in the centre of the black stripe.

Head.—Face; central lobe yellow, hindwardly a little raised, the apex pointed, depressed; side lobes convex, much longer than the central lobe, meeting together and enclosing it; apex of each rounded, leaving a small notch between them; sides at first almost parallel, then perceptibly constricted, afterwards widened out and slightly sinuate, the margins closely black-punctured. In the middle of the head is a black, punctured stripe, beginning in a point at the apex, gradually widening almost as far as the base of the central lobe, and then continued with straight sides to the base of the head; in the middle of this stripe, dividing it into two, is first the central yellow lobe, and then a line of the same width and colour continued from its base to the base of the head. *Antennæ* red, the base yellowish, apex brown; 1st and 2nd joints short, subequal; 3rd nearly twice as long as the 2nd; 4th and 5th subequal, each a little longer than the 3rd, and much thicker. *Eyes* black, rounded. *Ocelli* red. *Rostrum* reaching to the 3rd pair of coxæ; rostral channel at first wide, oval, with the sides thick, then constricted and shallow, but suddenly raised into thin plates, which end abruptly at the base of the head; viewed sideways across the constricted part, a portion of the sides appears to have been roundly cut out.

Thorax.—Pronotum; anteriorly straight, as wide as the head and eyes; sides long, nearly straight, a little constricted in the middle; margins incrassated, yellowish, posteriorly obtusely dentate; hinder sides rounded, deflected; posterior margin straight. Down the centre of the disk, in continuation of the stripe on the head, is a broad, black, punctured stripe, gradually wider to the posterior margin, and hindwardly fainter in colour, divided down the centre by a smooth, raised, yellow line, and bounded on the sides by a slighter yellow line; within the lateral margin a narrower, black, punctured stripe, lying posteriorly in a groove, on the outer side of which, within the hinder angles, the disk is much raised; the space between the central and lateral black stripes is of the luteous ground colour, with concolorous finer punctures and indications of lines. *Scutellum;* at the basal angles a very short black line; in the centre a broad black-punctured stripe, gradually decreasing in width and colour to the apex, where it ends in a point; in the centre of the

stripe is a smooth, raised yellow line, which decreases with it in width; and on each side is the indication of a smooth line; the rest of the scutellum is of the luteous ground colour, with concolorous punctures finer than those in the stripe. *Elytra: Corium* luteous or ochreous, with a greenish tinge, the anterior margin concolorously punctured as far inwards as the first nerve, which is strong, smooth, raised, and yellow; within this black-punctured, finer than on the pronotum; *Membrane* transparent. *Wings* transparent, the base of the nervures black. *Sternum* luteous, finely punctured; *Prosternum;* the plates of the divided segment produced anteriorly; reflexed and rounded off to behind the eyes. *Legs* yellow; *thighs* beneath, delicately brown-punctured, with two contiguous black dots beyond the middle; *tibiæ* with very fine short hairs, the first pair finely brown-punctured; *tarsi* yellow, the margins of the joints beneath and the claws brown.

Abdomen above, black, with a yellow line in the middle of the 6th segment; *Connexivum* yellow. *Underside* luteous, with concolorous fine punctures and 4 series of very fine black punctures, fainter on the 5th and 6th segments; stigmata black.

Length, 3½—4 lines.

Local. Darenth Wood, June; Weybridge, amongst grass, August.

Genus 2.—ÆLIOIDES, *A. Dohrn.*

Sub-elliptic, narrowed in front.

Head deflected and curved, especially in front, broad, subtriangular; *Face;* apex rounded, notched in the centre; sides much rounded, slightly sinuate; side lobes outwardly raised, inwardly depressed, meeting beyond and enclosing the central lobe, which is narrow, yet well defined, but at its fine apex depressed. *Antennæ;* each inserted on a stout tubercle rising near but anterior to each eye, and pointing forward, with its outer side produced into a short, blunt spine; 1st joint short; 2nd and 3rd slender, 3rd as long as the first, 2nd ⅓rd longer; 4th and 5th stout, 4th as long as the 2nd, 5th longest, fusiform. *Eyes* small, prominent, inner and posterior sides straight, outwardly rounded. *Ocelli* small, distant. *Rostrum* reaching beyond the 2nd pair of coxæ; 1st joint short, 2nd very long, 3rd short, wide and flat, 4th longer than the 3rd; the base lies in a

short, oval channel, the sides of which are much produced and rounded.

Thorax.—*Pronotum* almost hexagonal, convex; hindwardly, especially within the hinder angles, much raised; in front nearly straight, wider than the head, anterior angles produced into a small tooth; sides widely divergent, lateral margin wide, incrassated, posteriorly ending abruptly; hinder and posterior angles much rounded; posterior margin, opposite the *scutellum*, straight. *Scutellum* $\frac{2}{3}$rds the length of the abdomen, subtriangular, base not so wide as the abdomen, sides slightly sinuate, apex broadly rounded. *Elytra: Corium;* posterior margin rounded; *Membrane* with 5 nerves. *Sternum: Prosternum;* rostral channel very wide, the plate on each side much produced, raised, and rounded off; transverse channel deep; *Mesosternum;* the rostral channel wide and shallow. *Legs* short, stout; *thighs* compressed; *tibiæ* outwardly flattened, slightly hairy; *tarsi* strongly hairy beneath, 1st joint longer and stouter than the 3rd, 2nd shortest.

Abdomen semi-elliptic, convex beneath; *Connexivum* moderate, of equal breadth throughout, horizontal.

Species 1.—ÆLIOIDES INFLEXA.

CYDNUS INFLEXUS, *Wolff*, Ic. Cim. 188, t. 18, fig. 182 (1811).
CIMEX PERLATUS, *Fall.* Hem. Suec. 32, 18 (1829).
EYSARCORIS INFLEXUS, *Hahn*, Wanz. ii, 129, t. 70, fig. 210 (1834).
ÆLIA INFLEXA, *Ramb.* Faun. And. ii, 106, 2 (1842); *Am. et Serv.* Hém. 134, 2 (1843); *Sahlb.* Geoc. Fen. 29, 39 (1848); *Flor*, Rhyn. Liv. i, 124, 3 (1860).
PENTATONIA INFLEXUM, *H. Schf.* Nom. Ent. i, 55 & 92 (1835); Wanz. vii, 93 (1844).
SCIOCORIS INFLEXUS, *Kolen.* Mel. Ent. iv, 31, 153 (1846).
PENTATOMA INFLEXA, *Gorski*, Anal. 76, 42 (1852).
— LINEOLATA, *Muls.* An. Soc. Lin. 84 (1852).
ÆLIOIDES INFLEXA, *Dohrn*, Stett. Ent. Zeit. 21, 101 (1860).
PLATYSOLEN INFLEXUS, *Fieb.* Europ. Hem. 334, 3 (1861).

Luteous, shining, thickly and finely black-punctured.

Head piceous or bronzed, lighter at the sides, coarsely punctured; on the *Crown* a yellow line mostly extending to the central lobe of the *face*, at each side of this line another shorter and finer. *Antennæ;*

tubercle yellow, the spine piceous; the first 3 joints yellow, the 4th and 5th black. *Eyes* piceous, hindwardly yellow. *Ocelli* reddish. *Rostrum* luteous, the labrum darker, last joint piceous; the curved margin of the rostral channel yellow. Underside of the head rugosely black-punctured.

Thorax.—Pronotum; in the centre a longitudinal, fine, yellow line; from this on the anterior 3rd a many-sinuated, faint, transverse line extends to the lateral margins; close to this anteriorly are two longish, narrow, irregular smooth spaces. *Scutellum* with a fine pale line down the centre, at the extremity of which is a dark spot, the base often shaded with brown, on the outer margins a very narrow black spot, joined to which is a pale-yellow, shining, comma-shaped spot. *Elytra: Corium* punctured like the scutellum and pronotum; *membrane* piceous or fuscous. *Sternum* pale luteous, sparsely black-punctured, more thickly at the sides and in front; rostral channel black. *Legs: coxæ* and *thighs* pale luteous, the latter with brown punctures in longitudinal rows, two or three punctures towards the apex larger and darker than the rest; *tibiæ* darker towards the tip; *tarsi* luteous, 3rd joint piceous.

Length, 2¼—3 lines.

Local. Dartford Brent; Weybridge; in July and August.

Family 6.—PODOPIDÆ.

Genus 1.—Podops, *Lap.*

Elliptic, convex; *pronotum* armed at the anterior angles; *eyes* prominent.

Head subquadrangular, widest behind the eyes; *Face* rounded in front, central lobe scarcely so long as the side lobes, leaving an apical notch. *Antennæ* short; the tubercles at the base of the eyes, the outer side produced into a short, obtuse, curved spine; 1st joint stout, 2nd slender, shorter; 3rd and 4th stouter than the 2nd, in length subequal, nearly as long as the 1st; 5th longest and stoutest, fusiform; *Eyes* semi-oval, very prominent, not touching the pronotum. *Ocelli* prominent, distant. *Rostrum* reaching to the 3rd pair of coxæ, slender, basal joint in a channel the sides of which are much produced.

Thorax.—Pronotum convex, hexagonal, anterior margin longer than the width of the head, a little concave, with a stout process at each

anterior angle, sides straight, margins broadly reflexed, terminating posteriorly in a tooth; hinder angles rounded; hinder sides deflected; posterior margin straight; disk in front, raised into a short, central, longitudinal keel, on each side of which is a furrow extending to the anterior angle, on the inner side of the process. *Scutellum* nearly as long as the abdomen, but not so wide; convex, subquadrangular, rounded behind, sides slightly sinuate. *Elytra: Corium;* the portion uncovered by the scutellum alone coriaceous, the rest membranous; *Membrane* with 5 long nerves. *Sternum* without rostral channel; *Prosternum* on each side with a transverse channel. *Legs* short, stout; *tibiæ* with short hairs, 1st pair angulated; *tarsi* hairy beneath, 2nd joint very small.

Abdomen convex above and beneath; *Connexivum* narrow, the sides posteriorly not covered by scutellum or elytra.

Species 1.—PODOPS INUNCTUS.

CIMEX INUNCTUS, *Fab.* E. S. iv, 90. 45 (1794); *Panz.* F. G. 36, 24; *Wolff*, Ic. Cim. 5, t. 1, fig. 5 (1800).
TETYRA INUNCTA et TANGIRA, *Fab.* S. R. 139, 53 & 138, 49 (1803).
— TANGIRA, *Fall.* Hem. Succ. 16, 7 (1829).
PODOPS INUNCTUS, *Lap.* Hem. 72 (1832); *Burm.* Handb. ii, 387, 2 (1835); *Spin.* Hém. 372, 1 (1837); *Germ.* Zeits. i, 63, 1 (1839); *Am. et Serv.* Hém. 57, 1 (1843); *Flor*, Rhyn. Liv. i, 78 (1860); *Fieb.* Europ. Hem. 350 (1861).
TETYRA INUNCTA, *H. Sch.* Nom. Ent. i, 53 & 89 (1835).
PODOPS TANGIRUS, *Germ.* Zeits. i, 66, 6 (1839).
? — SICULUS, *Costa.* Ann. Soc. Ent. Fr. x, 301, 12, pl. 6, fig. 8 (1841).

Dull, dark luteous, thickly black-punctate, smooth.

Head black, rugosely punctured, central lobe elevated into a keel, margin of side lobes rounded and reflexed. Underside black, rugosely punctured. *Antennæ* black, subpilose; 1st joint piceous, the base and tip of all the joints (except the tip of the 5th) narrowly luteous. *Eyes* and *ocelli* black. *Rostrum* luteous; terminal joint black.

Thorax.—Pronotum dark luteous, thickly and deeply black-punctured, the punctures in irregular, transverse, sinuous rows; the process at the anterior angles securiform; posterior to the frontal furrow, a transverse, slightly raised, sinuous line; before this line, by

the proximity of the punctures, the disk is black. *Scutellum* dark luteous, black-punctured; the punctures, except at the base, finer than on the pronotum, base raised in a triangular form, the apex of which is extended down the centre; close to the pronotum 3 equidistant white, shining, nodules; one central, the others close to the basal angles, which are black and depressed. *Elytra:* the uncovered portion of the *Corium* dark luteous, black-punctured like the scutellum. *Sternum* black, rugosely punctured. *Legs* and *coxæ* pale luteous; *thighs* beneath with 2 large band-like brown spots, one being beyond the middle, the other at the tip; *tibiæ;* 1st pair on the inside with a black line the whole length; 2nd pair on the inside with a black spot at the base and a brown shade at the tip; *tarsi* light brown, third joint black.

Abdomen above black; beneath ferruginous, lightly black-punctured; *Connexivum* luteous, black-punctured.

Length, $2\frac{3}{4}$—3 lines.

Not uncommon in sandy places among the roots of grass in spring and autumn.

Near London; Folkestone; Deal; Holm Bush, Sussex (*Wollaston*).

Family 7.—PENTATOMIDÆ.

Genus 1.—Eysarcoris, *Hahn.*

Short, stout, broad-oval, pointed in front, convex.

Head much deflected, quadrangular, thick; *Crown* slightly convex; *Face;* central lobe broad, reaching the anterior margin, which is widely notched; side lobes a trifle longer than the central lobe, at the apex rounded. *Antennæ:* tubercles short, stout, inserted obliquely anterior to the eyes, the apex outwardly produced into a short, blunt spine; 2nd and 4th joints in length subequal, longer than the 3rd; 5th longest and broadest, fusiform. *Eyes* moderate prominent, 3-sided, outwardly rounded. *Ocelli* distant. *Rostrum* rising at the anterior margin of the head, reaching to the 2nd segment of the abdomen, 2nd joint longest, 1st and 3rd joints widened; rostral channel short, sides produced and rounded before and behind.

Thorax.—Pronotum convex, short, hexagonal, posteriorly very broad, the side and hinder margins converging into a more or less

obtuse and projecting point, of which the sides are much rounded; front a little wider than the head, concave, anterior angles cut off straight; sides more or less sinuate; posterior angles rounded, posterior margin, as far as the base of the scutellum, straight; the disk hindwardly at the broadest part much raised, before and behind this much deflected. *Scutellum* convex, more than half as long as the abdomen, but not so broad, sides much sinuate, apex broadly rounded. *Elytra: Corium;* anterior margin sinuate; posterior margin rounded; *Membrane* with 5 long nerves. *Sternum* without transverse channels; rostral channel very slight. *Legs* moderate; *tibiæ* finely haired; *tarsi;* 1st joint as long as the 3rd, 2nd short.

Abdomen short, semi-elliptic, very convex beneath.

Species 1.—EYSARCORIS MELANOCEPHALUS.

CIMEX MELANOCEPHALUS, *Fab.* E. S. 12, 176 (1794); *Wolff*, Ic. Cim. fig. 134 (1811); *Panz.* F. G. 26, 24.
CYDNUS — *Fab.* S. R. 187, 14 (1803).
EYSARCORIS — *Hahn*, Wanz. ii, 66, t. 70, fig. 211 (1834).
EUSARCORIS — *Fieb.* Europ. Hem. 332, 1 (1861).

Shining, whitish clouded with brown, punctured; *pronotum* in front with two large, subquadrate, coppery-black patches, and a large triangular patch of the same colour at the base of the *scutellum.*

Head coppery-black, rugosely punctate. *Antennæ:* 1st and 2nd joints luteous; 3rd more or less piceous; 4th and 5th black, the base narrowly luteous. *Eyes* brown. *Ocelli* small, red. *Rostrum* luteous; *labrum* and 3rd and 4th joints brown.

Thorax.—Pronotum; sides nearly straight, at the broadest part of the disk a little produced, hinder angles much rounded; lateral margins yellowish, delicately bordered with black, at the anterior angles a very minute tooth; disk across the centre whitish, in front a large subquadrate patch at each side, separated by a small triangular space of the ground colour; hinder portion shaded with brown. *Scutellum* whitish, shaded with brown, base with a large, triangular, coppery-black patch. *Elytra: Corium* whitish shaded with brown; *Membrane* brown. *Sternum* strongly punctured, coppery-black, with a white patch on each side of the centre. *Legs* pale yellow; *thighs* with a few, scattered brown punctures, two large

coppery-black spots beyond the middle and towards the under side, and two small spots at the apex, one above, the other beneath; *tibiæ*, at their insertion, with two black dots above and one beneath; *tarsi* luteous; 1st and 2nd joints at the tip, and the 3rd wholly, piceous.

Abdomen convex, above black, beneath coppery-black, punctured finer than the sternum; *Connexivum* moderate, of equal breadth throughout; above and beneath black, with marginal, triangular yellow spots.

Length, 3 lines.

Darenth Wood, Kent, by sweeping, in June.

Species 2.—Eysarcoris æneus.

Cimex æneus, *Scop.* Ent. Carn. 122, 358 (1763).
— fucatus, *Rossi*, F. E. 13, 11 (1790).
— perlatus, *Fab.* E. S. iv, 125, 177 (1794); *Wolff*, Ic. Cim. 68, t. 7, fig. 65 (1801); *Fall.* Mon. Cim. 50. 18 (1807); Hem. Suec. 32, 18 (1829).
Cydnus — *Fab.* S. R. 187, 15 (1803).
Eysarcoris perlatus, *Hahn*, Wanz. ii, 67, t. 51, fig. 155 (1834).
Pentatoma perlatum, *H. Schf.* Wanz. vii, 93 (1844).
Eysarcoris æneum, *Kolen.* Mel. Ent. iv, 32, 156 (1846).
Eusarcoris æneus, *Fieb.* Europ. Hem. 332, 2 (1861).

Shining, whitish shaded with dusky or brown, punctured; *pronotum* in front, with two large subquadrate coppery-black patches; *scutellum* with a large white nodule at each basal angle.

Head coppery-black, rugosely punctured; *Crown* with a central whitish line. *Antennæ:* first 3 joints luteous, with a brown line beneath; 4th black, the base luteous; 5th black. *Eyes* brown. *Ocelli* small, brown. *Rostrum* luteous; *labrum* and 3rd and 4th joints brown.

Thorax.—Pronotum; sides sinuate, especially towards the posterior angles, which are much produced, forming an obtuse point projecting beyond the base of the elytra; lateral margins whitish, in front a little widened, anterior angles sharp, but not toothed; disk in front with two large, subquadrate, coppery-black patches, of which the inner angle is bordered by a strong white line, the triangular space between the patches and the centre of the disk whitish, posterior and lateral portions of the disk dusky. *Scutellum*

whitish, shaded with dusky; in the centre an interrupted, faint whitish line; at each basal angle a large, ovate, oblique, shining white nodule. *Elytra: Corium* whitish, shaded with brown; *Membrane* brownish. *Sternum* strongly punctured, luteous, the sides more or less black. *Legs* pale yellow; *thighs* with black-brown punctures in rows, and beyond the middle with a large sub-annular black spot; *tibiæ* more or less black-punctured in rows, and two larger spots on the outer side near the base; *tarsi* piceous, the base of each joint paler.

Abdomen above black, beneath finely punctured, coppery-black, laterally with a regular, broad yellowish band, and more centrally on the posterior segments with an irregular broad yellowish band; stigmata black; *Connexivum* above, externally yellow, with narrow black interruptions; internally black; beneath yellow with narrow black intervals.

Length, $2\frac{1}{2}$—3 lines.

Scarce. New Forest (*Rev. T. A. Marshall*).

Genus 2.—PENTATOMA, *Latr.*

Oval, subtriangular in front.

Head elongate; *Face* widened before the eyes, then gradually narrower and rounded to the apex; side lobes wide, central lobe narrow. *Antennæ* moderate or slender. *Eyes* moderate. *Ocelli* small. *Rostrum* 4-jointed, slender, reaching at least to the 2nd pair of coxæ, 2nd joint longest; rostral channel shallow, sides a little produced in front.

Thorax.—Pronotum very broad, subconvex, hexangular, hinder angles rounded, or sometimes much produced. *Scutellum* at least $\frac{1}{2}$ the length of the abdomen, subtriangular, base convex, sides sinuate, being constricted beyond the middle. *Elytra* generally not covering the connexivum; *Corium*, outer margin rounded, posterior margin straight or rounded; *Membrane* with 7—9 nerves. *Sternum: Prosternum;* on each side a transverse channel; *Mesosternum* with a slight keel. *Legs* moderate; *tibiæ* outwardly with the margins reflexed, forming a long channel; *tarsi;* 1st and 3rd joints in length subequal, or the 1st longest, 2nd short.

Abdomen, above subconvex, beneath convex; *Connexivum* generally recurved.

Species 1.—Pentatoma nigricorne.

Cimex nigricornis, *Fab.* E. S. iv. 94, 59 (1794); S. R. 157, 8 (1803); *Wolff*, Ic. Cim. 138, t. 14, fig. 132 (1804); *Fall.* Mon. Cim. 47, 9 (1807); Hem. Suec. 27, 9 (1829); *Burm.* Handb. ii, 369, 15 (1835); *Ramb.* F. And. ii, 124, 11 (1842).

— Eryngii, *Germ.* Reis. Dalm. 283, 479; F. Ins. Eur. 2, 21 (1813).

Pentatoma nigricornis et Eryngii, *Hahn*, Wanz. ii, 58 & 59, t. 48, fig. 147 & 148 (1834).

— nigricorne et varium, *H. Schf.* Nom. Ent. i, 56 & 93 (1835).

— — *H. Schf.* Wanz. vii, 95 (1844); *Flor*, Rhyn. Liv. i, 138, 6 (1860).

Carpocoris nigricornis et Eryngii, *Kolen.* Mel. Ent. iv, 46, 170, & 47, 171 (1846).

Mormidea — *Sahlb.* Geoc. Fen. 30, 1 (1848); *Fieb.* Europ. Hem. 335, 3 (1861).

Pentatoma melanocera, *Muls.* An. Soc. Lin. 90 (1852).

Very variable in colour and size. Greenish, ochreous-brown, brown-red, or red with more or less black streaks or spots. Finely punctured. *Antennæ* black, 1st joint reddish. Hinder angles of the *pronotum* produced into a prominent, broad, obtuse, up-curving point, of which the apex is broadly black. *Membrane* smoke-brown. *Legs* yellowish or reddish.

Ochreous brown. *Head* deflected, long, very slightly convex; *Crown* on each side with two fine, black lines; *Face;* outer margins of the side lobes nearly straight, black, at the tip rounded, inner margin straight; central lobe as long as the side lobes. *Antennæ* rather short; tubercles yellowish, at the apex outwardly a fine short spine; 1st joint not reaching the end of the head; 2nd ⅓rd longer than the 1st; 3rd subequal; 4th and 5th subequal, longer than the 2nd. *Eyes* brown. *Ocelli* distant. *Rostrum* luteous, with a central dark line, tip black.

Thorax.—Pronotum in front deflected at the same angle as the head; anterior margin in the centre straight, anterior angles much produced, cut off obliquely behind the eyes, outwardly acute; sides

widely divergent, sinuate, yellow, margins reflexed; hinder angles very prominent, forming a broad, angular, obtuse, up-curving black point; hinder sides narrowly yellow, gently rounded into the straight posterior margin. On the 1st third of the disk are two irregular, transverse, smooth spaces, with a few black punctures in their centre; from the anterior angles, within the yellow sides, is a broad, black-punctured streak; black punctures are also, but less thickly, spread within the yellow sides to and within the black hinder angles; on the central portion of the disk the punctures are not black. *Scutellum* crenate-punctate, the punctures black, and stronger than those on the pronotum; apex paler than the base. *Elytra: Corium* paler and finer black-punctured than the pronotum; anterior and posterior margins a little rounded; *Membrane* with 7 nerves, smoke-brown, with a dark cloud at the inner basal angle and within the anterior margin. *Sternum* yellowish, finely punctured. *Legs: thighs* pale yellowish; beneath very finely haired, delicately black-punctured, and with a fine, longitudinal, central black line, and a black spot at the apex; *tibiæ* pinky; *tarsi* pinky; 1st joint longer and stouter than the 3rd; 3rd black at the sides.

Abdomen, above black; *Connexivum* black and red alternately. Underside finely punctured, yellowish-brown, sides paler.

Length, 5½—6 lines.

Rare. Two specimens taken casually by Mr. J. J. Reading, in Devonshire, and one in the same county by Mr. Saunders.

Flor ('Rhyn. Liv.,' p. 142) gives *Pentatoma fuscispinum*, Bohem., as a closely allied but distinct species, and remarks that "it is easy to be distinguished by the difference in the form of the pronotum. With us as yet I have found no transition from one to the other." Yet, after pointing out the differences, he concludes his remarks by saying, that "the intermediate forms (Uebergangsformen) are to be considered as bastards, and not varieties." Fieber, however, in his remarks on Flor's work in the 'Wiener Entomol. Monatsschrift,' 1863, says without any doubt that *P. fuscispinum* is synonymous with *P. nigricorne*.

Cimex lunula, Fab., and *Carpocoris bilunulata*, Kolen., are quoted by authors as synonymous of *Cimex varius*, Fab., but they are all probably, varieties of *P. nigricorne*, Fab.

Species 2.—Pentatoma Baccarum.

Cimex Baccarum, *Lin.* F. S. 928 (1761); S. N. 1, 721, 45 (1767).
— Verbasci, *De G.* Mém. iii, 257, 4, pl. 14, fig. 5 (1773).
— Baccarum, *Fab.* E. S. iv, 117, 144 (1794); S. R. 172, 92 (1803); *Panz.* F. G. 33, 20; *Wolff*, Ic. Cim. 60, t. 6, fig. 57 (1801); *Fall.* Mon. Cim. 48, 13 (1807); Hem. Suec. 29, 13 (1826); *Zett.* Faun. Ins. Lap. i, 464, 5 (1828); Ins. Lap. 260, 6 (1840); *Burm.* Handb. ii, 369, 13 (1835); *Ramb.* F. And. 124, 10 (1842).
Pentatoma Baccarum, *Le P. et Serv.* Enc. x, 57, 20 (1825); *Hahn*, Wanz. ii, 63, t. 50, fig. 152 (1834); *Sahlb.* Geoc. Fen. 26, 1 (1848); *Flor*, Rhyn. Liv. i, 137, 5 (1860).
Carpocoris — *Kolen.* Mel. Ent. iv, 53, 181 (1846).
Mormidea — *Fieb.* Europ. Hem. 335, 1 (1861).

Distinctly hairy. Luteous, ochreous, or with a purple tinge, deeply black-punctured. Apex of *scutellum* broadly yellow. *Antennæ* and *connexivum* alternately black and yellow. *Legs* luteous, finely black-punctured. Underside luteous or rufo-luteous, with black punctures in longitudinal series.

Head rugose, black-punctured: *Face;* sides straight, apical margin reflexed, central lobe raised, well defined, not so long as the side lobes, leaving an apical notch. *Antennæ:* tubercle at the top produced outwardly into a distinct blunt spine; 1st and 3rd joints in length subequal, each not half the length of the 2nd; 4th as long as the 2nd; 5th not so long as the 4th. The tubercle and 1st joint yellow; 2nd black, the base broadly yellow, except a fine black line continued down the inner side; 3rd and 4th black, base and apex yellow; 5th black, the base alone yellow. *Eyes* brown. *Ocelli* brown.

Thorax.—*Pronotum* subconvex; anterior margin concave, anterior angles produced, cut off obliquely behind the eyes, outwardly not acute; sides widely divergent, margins broadly reflexed; hinder angles rounded, not produced; hinder sides short, straight, deflected; posterior margin slightly concave; disk with round, deep punctures, and a lateral fovea; in front flattened, deflected; sides rugose, sometimes black; posteriorly convex, and raised within the hinder angles.

Scutellum; apex narrow, rounded, broadly yellowish, the punctures in the centre of the base distant. *Elytra: Corium;* anterior and posterior margins slightly rounded; disk finer punctured than the pronotum; across the base a black patch; *Membrane* brownish, transparent, with 8 nerves shaded on each side with a darker tint; at the inner basal angle a black spot, and a larger, distinct one beyond. *Wings* diaphanous, with a greenish shade; from the anterior margin, opposite the spot on the membrane, a crescent-formed, dark cloud extends across to the fold. *Legs* ochreous, finely black-punctured, and with long hairs; on the *thighs* beneath, beyond the middle, one or two black spots larger than the rest, and a black spot within the apex; *tibiæ* beneath, with a black spot at the base, the inner side of the apex also black; *tarsi* hairy, 1st joint except the base, and the 3rd joint, black; 2nd and base of the 1st, yellow.

Abdomen above subconvex, black; *Connexivum* black, with a large subquadrate, yellow spot in the middle of each segment. Underside rufo-luteous, with 4 longitudinal series of black punctures, more or less distinct.

Length, 4½—5½ lines.

Common in autumn.

Species 3.—Pentatoma Juniperinum.

Cimex Juniperinus, *Lin.* F. S. 249, 930 (1761); S. N. 1, 722, 48 (1767); *De G.* Mém. iii, 231 & 253, i, pl. 13, fig. 1, 2 (1773); *Fab.* E. S. iv, 109, 113 (1794); S. R. 167, 60 (1803); *Panz.* F. G. 33, 14; *Wolff,* Ic. Cim. 54, t. 6, fig. 51 (1801); *Fall.* Mon. Cim. 47, 12 (1807); Hem. Suec. 28, 11 (1829); *Zett.* F. Ins. Lap. i, 465, 7 (1828); Ins. Lap. 260, 7 (1840).

Pentatoma Juniperina, *Hahn,* Wanz. ii, 61, t. 49, fig. 150 (1834); *Am. et Serv.* Hém. 132, 5 (1843); *Sahlb.* Geoc. Fen. 26, 3 (1848).

— Juniperinum, *H. Sch.* Nom. Ent. i, 56, 92 (1835); *Flor,* Rhyn. Liv. i, 132, 2 (1860).

Carpocoris Juniperina, *Kolen.* Mel. Ent. iv, 50, 175 (1846).

Pentatoma Juniperi, *Fieb.* Europ. Hem. 336, 3 (1861).

Deep green above and beneath, slightly shining, very finely punctured; sides of the *pronotum,* base of the anterior margin of the

elytra, apex of the *scutellum*, and the outer side of the *connexivum*, yellow; *antennæ* and *legs* black.

Head subconvex; *Face* in front with a small notch; central lobe nearly as long as the side lobes. *Antennæ:* tubercle short, outwardly produced into a short, blunt spine; 1st joint short; 2nd three times as long as the 1st; 3rd $\frac{2}{3}$rds the length of the 2nd; 4th and 5th in length subequal, nearly as long as the 2nd. *Rostrum* reaching beyond the 3rd pair of coxæ, black.

Thorax.—Pronotum; anterior margin straight in the centre, anterior angles produced, cut off obliquely behind the eyes, exteriorly acute; sides widely divergent, a little rounded; margins reflexed, yellow; hinder angles obtuse, not produced; hinder sides deflected, nearly straight; posterior margin straight; disk in front flattened and deflected, with two smooth, irregular, transverse spaces on the first third; posteriorly convex and raised within the hinder angles almost into a nodule. *Scutellum* on a level with the pronotum; base with a subtriangular, black, slightly raised patch across the entire breadth; disk subcrenate-punctate, apex distinctly greenish-yellow. *Elytra: Clavus* and outer side of the *Corium* coarser punctured than the disk, base of the anterior margin of the latter yellow; *Membrane* dusky, transparent, with 8 nerves. *Sternum* finely punctured. *Legs* black, or greenish-black, with very short hairs; hinder *tibiæ* slightly curved.

Abdomen, above black; *Connexivum* yellow, inwardly black. Underside finely punctured.

Length, 5—5$\frac{1}{2}$ lines.

On juniper bushes. Rare.

Sanderstead Downs (*A. Hayward*); Mickleham Downs (*T. Ingall*).

Species 4.—PENTATOMA VERNALE.

CIMEX VERNALIS, *Wolff*, Ic. Cim. 141, 135, t. 14, fig. 135 (1800); *Panz.* F. G. 113, 6; *Fall.* Hem. Suec. i, 30, 14 (1829); *Fieb.* Europ. Hem. 339, 1 (1861).

PENTATOMA VERNALE, *Hahn*, Wanz. ii, 64, t. 50, fig. 153 (1834); *H. Schf.* Nom. Ent. i, 56 (1835); *Sahlb.* Geoc. Fen. 26, 2 (1848); *Flor*, Rhyn. Liv. i, 135, 4 (1860).

CARPOCORIS — *Kolen.* Mel. Ent. iv, 52, 179 (1845).

Luteous-brown, thickly and finely black-punctured; *antennæ* pinky-red; 4th joint with a broad black ring; 5th except the base, black; *abdomen* above black; underside pale luteous, with dark, longitudinal punctured streaks; *legs* luteous, finely black-punctured.

Head flat; *Face* in front without a notch, rounded; central lobe short, in front depressed, enclosed by the side lobes. *Antennæ:* tubercle very short, apex rounded; 1st joint more than half the length of the 2nd; 2nd and 3rd in length subequal; 4th and 5th subequal, each longer and stouter than the 3rd. *Eyes* rather small, prominent, concolorous with the head. *Ocelli* distant. *Rostrum* reaching to the 3rd pair of coxæ, luteous.

Thorax.—Pronotum in front deflected; anterior margin slightly concave, cut off obliquely behind the eyes; sides widely diverging, slightly sinuate, margins yellow, reflexed; hinder angles prominent, broadly rounded; hinder sides rounded into the straight posterior margin. *Scutellum* punctured like the pronotum; apex luteous, narrowly rounded. *Elytra: Corium* punctured finer than the pronotum and scutellum; anterior and posterior margins a little rounded; membrane with 7 nerves, luteous, or luteous-brown, with a dark cloud at the inner basal angle. *Sternum* luteous, finely black-punctured. *Legs* luteous or reddish, very finely black-punctured; *tarsi* concolorous.

Abdomen, above black; *Connexivum* black with yellow intervals. Underside pale luteous, with longitudinal wavy bands or streaks of black punctures; *stigmata* black.

Length, $3\frac{1}{4}$—$4\frac{1}{2}$ lines.

Rare. One specimen taken casually, locality unknown; and one specimen in the collection of Mr. G. R. Crotch.

Species 5.—Pentatoma dissimile.

Cimex prasinus, *De G.* Mém. iii, 266, 9 (1773); *Wolff*, Ic. Cim. 52, t. 6, fig. 49 (1801); *Fall.* Mon. Cim. 47, 11 (1807); Hem. Suec. 28, 10 (1829).

— dissimilis, *Fab.* E. S. iv, 109, 112 (1794); S. R. 167, 59 (1803); *Panz.* F. G. 33, 13; *Wolff*, Ic. Cim. 53, t. 6, fig. 50 (1801); *Burm.* Handb. ii, 370, 17 (1835); *Fieb.* Europ. Hem. 339, 4 (1861).

Pentatoma Juniperina, *Le P. et Serv.* Enc. x, 57, 19 (1825).

— prasinum, *Hahn*, Wanz. ii, 60, pl. 49, fig. 149 (1834).

CARPOCORIS PRASINA et DISSIMILIS, *Kolen.* Mel. Ent. iv, 43, 173, & 49, 174 (1846).
PENTATOMA DISSIMILIS, *Am. et Serv.* Hém. 131, 4 (1843).

Deep green, strongly black-punctured, slightly shining, beneath luteous, greenish or reddish, *legs* greenish, *tarsi* reddish-brown.

Head flat; *Face* in front with a small, narrow notch; central lobe pointed, not quite so long as the side lobes. *Antennæ* inserted on a short tubercle, the top of which is outwardly produced into a short, blunt spine; 1st joint shorter than the head; 2nd twice the length of the 1st; 3rd and 4th each progressively a little longer; 5th perceptibly longer than the 4th; the first 3 joints greenish, 4th reddish-brown, 5th reddish-brown at the base, the remainder piceous. *Eyes* greenish, the centre brown. *Ocelli* brown. *Rostrum* reaching beyond the 3rd pair of coxæ, greenish, the tip black.

Thorax.—Pronotum; anterior margin concave, anterior angles produced and cut off obliquely behind the eyes, exteriorly pointed; sides nearly straight, widely divergent; margins slightly reflexed, sometimes yellowish; hinder angles prominent, broadly rounded; hinder sides a little rounded; posterior margin straight. *Scutellum* punctured like the pronotum; base convex; posteriorly a slight, wide depression at each side; apex gradually rounded, pale green. *Elytra* punctured rather finer than the pronotum and scutellum; *Corium;* posterior margin straight; *Membrane* smoke-brown, with a fuscous cloud at the inner basal angle. *Sternum* pale greenish, slightly punctured. *Legs* green; *thighs* paler; *tarsi* reddish-brown, claws black.

Abdomen, above black, beneath greenish or reddish, with shallow punctures; *Connexivum* green, thickly and finely black-punctured, the margin and the edges of the segments narrowly yellow.

Length, 5½—6 lines.

Common on many kinds of trees, in summer.

Genus 3.—STRACHIA, *Hahn.*

Head wide, flat, (with the eyes) subtrapezoidal; *Face;* sides before the eyes sinuate, lateral margins incrassated, reflexed; apex rounded, with a central small notch; central lobe short, pointed. *Antennæ* moderate; tubercles short, inserted obliquely anterior to the eyes; 1st joint short, stout; 2nd, 4th, and 5th in length subequal;

3rd shorter; 4th and 5th stoutest. *Rostrum* reaching to the 2nd pair of coxæ; basal joint very broad, long; 2nd joint long; 3rd and 4th short; rostral channel shallow, sides a little produced in front.

Thorax.—*Pronotum* subconvex, subtrapezoidal; anterior margin very concave, reflexed; anterior angles cut off straight, exteriorly produced into a very small, obtuse tooth; lateral margins straight, reflexed; hinder angles raised, obtuse; posterior margin rounded; on the first third of the disk a transverse raised smooth line. *Scutellum* more than half the length of the abdomen, at the base convex, sides sinuate, apex small. *Elytra: Corium;* anterior margin rounded, reflexed; posterior margin slightly concave or sinuate; *Membrane* with 6 long nerves. *Sternum: Prosternum;* on each side a transverse channel; *Mesosternum* with a slight keel. *Legs: tibiæ* on the upper side with a channel the whole length; *tarsi;* 1st joint nearly as long as the 2nd and 3rd together; 2nd short.

Abdomen beneath convex; *Connexivum* moderate.

Species 1.—STRACHIA ORNATA.

CIMEX ORNATUS, *Lin.* F. S. 251, 937 (1761); S. N. 1, 723, 56 (1767); *Scop.* Ent. Carn. 123, 361 (1766); *Fab.* E. S. iv, 117, 144 (1794); S. R. 172, 93 (1803); *Panz.* F. G. 33, 21; *Wolff,* Ic. Cim. 15, t. 2, fig. 15 (1800); *Fall.* Mon. Cim. 49, 15 (1807); Hem. Suec. 30, 15 (1829); *Burm.* Handb. ii, 368, 12 (1835); *Ramb.* Faun. And. ii, 118, 1 (1842).

— DOMINULUS, *Scop.* Ent. Carn. 124, 362 (1766).

— FESTIVUS, *Lin.* S. N. ii, 723, 57 (1767); *Fab.* E. S. iv, 118, 151 (1794); S. R. 173, 95 (1803); *Panz.* F. G. 6, 19; *Wolff,* Ic. Cim. 61, t. 6, fig. 58 (1801).

STRACHIA FESTIVA, *Hahn,* Wanz. 1, 181, t. 29, fig. 93 (1831).

PENTATOMA ORNATA, *L. Duf.* Rech. 30, 6 (1833).

EURYDEMA HERBACEUM et PICTUM, *H. Schf.* Panz. F. G. 115, 12 & 116, 12 & 13 (1835).

STRACHIA ORNATA, HERBACEA et PICTA, *Hahn,* Wanz. iii, 12, 13 & 14, t. 77, fig. 238—240 (1835).

EURYDEMA ORNATA, *Am. et Serv.* Hem. 126, 1 (1843); *Sahlb.* Geoc. Fen. 24, 1 (1848).

EURYDEMA ORNATUM, FESTIVUM, DECORATUM, HERBACEUM, LHESGICUM, ARMENIACUM et PICTUM, *Kolen.* Mel. Ent. iv, 25—29, 144—151 (1846).

EURYDEMA ORNATUM, *Flor,* Rhyn. Liv. i, 144, 1 (1860).

STRACHIA FESTIVA et ORNATA, *Fieb.* Europ. Hem. 342, 1 & 2 (1861).

Elliptic, glossy red; 6 spots on the *pronotum*, a large triangular spot at the base of the *scutellum*, the *clavus*, the inner portion of the *corium* and a posterior spot, black; *membrane* and *wings* black. Beneath red, with 3 rows of large black spots.

Head black, the reflexed margin red. *Antennæ*, *Eyes* and *Ocelli* black.

Thorax.—*Pronotum* finely and widely punctured, red, with 6 black spots, of which two long, narrow, transverse, are anterior to the raised, transverse line, and four are posterior to it, in a transverse row, the two middle ones being the larger. *Scutellum* finely, widely crenate-punctuate, subconvex; apex unpunctured, rather elongated to an obtuse point; at the base a large black spot, subtriangular, the sides being rounded; before the apex, on each side, a small narrow black spot, appearing like an encroachment of that colour from the corium. *Elytra: Clavus* black, strongly punctured; *Corium;* disk finer and closer punctured than the scutellum and pronotum, outwardly stronger punctured; red, with the inner portion broadly black as far as the posterior angle, there ending abruptly; at the outer side of this black patch is a large triangular interruption of the ground colour; beneath the posterior margin of the black patch the disk is raised transversely, and posterior to this is a black spot; *Membrane* black. *Wings* black. *Sternum;* slightly punctured, stronger in the channel of the prosternum; red, the middle, and a large spot at the side of each segment, black. *Legs* black.

Abdomen, above red, with a black spot on the last two segments; beneath red with three rows of large black spots, the central spots quadrangular, the lateral ones oval; *Connexivum* red.

Length, 4½—5 lines.

Not common. Frequents the flowers of *Umbelliferæ*. A single specimen taken at Lee.

Species 2.—STRACHIA OLERACEA.

CIMEX OLERACEUS, *Lin.* F. S. 550, 934 (1761); S. N. 1, 722, 53 (1767); *De G.* Mém. iii, 266, 10, pl. 15, fig. 22 & 23 (1773); *Fab.* E. S. iv, 121, 162 (1794); S. R. 177, 112 (1803); *Panz.* F. G. 32, 12; *Wolff*, Ic. Cim. 16, t. 2, fig. 16 (1800); *Fall.* Mon. Cim. 49, 16 (1807); Hem. Suec. 31, 16 (1829); *Zett.* F. Ins. Lap. i, 465, 8 (1828); Ins. Lap. 260, 8 (1840); *Burm.* Handb. ii, 368, 11 (1835).

STRACHIA OLERACEA, *Hahn*, Wanz. i, 182, t. 29, fig. 94 (1831); *Fieb.* Europ. Hem. 345, 9 (1861).

EURYDEMA OLERACEUM, *H. Schf.* Nom. Ent. 1, 55 (1835); *Kolen.* Mel. Ent. iv, 22, 141 (1846); *Flor*, Rhyn. Liv. i, 146, 2 (1860).

— OLERACEA, *Sahlb.* Geoc. Fen. 25, 2 (1848).

Elliptic, blue-green, finely punctured; sides of the *head* and *pronotum*, anterior margin of the *corium*, a broad central line on the *pronotum*, apex of the *scutellum*, and a contiguous large spot on each *elytron*, yellow, white or red.

Head.—The reflexed margin straw-yellow; *Antennæ*, *Eyes* and *Ocelli*, black.

Thorax.—*Pronotum*; anterior margin in the centre, lateral margins, and a broad, hindwardly diverging line down the centre of the disk straw-yellow; the raised smooth line on the anterior portion of the disk is widened laterally, and before and behind it the punctures are closer and deeper, elsewhere they are distant and disposed in transverse rows. *Scutellum* crenate-punctate; apex a short, obtuse point, almost rounded, unpunctured, broadly straw-yellow; sometimes also the sides of the base are more or less yellow. *Elytra: Corium* much finer and closer punctured than the pronotum and corium; anterior margin and a large transverse spot in a line with the apex of the scutellum, straw-yellow; *Membrane* black-brown. *Sternum* slightly punctured, stronger in the channel of the *Prosternum*; black or with yellow spots. *Legs; thighs* entirely black or with the base more or less; the tip narrowly, and a half-ring beneath, yellow; *tibiæ* black, with a central yellow ring; *tarsi* black.

Abdomen black above; beneath black or yellow, with 3 rows of large black spots, one central and one on each side.

The lighter markings on the upper side and legs vary from white to red; the colours on the underside vary from black to yellow, with spots of various form and size, so that no two specimens are exactly alike in colouring.

Length, 3—3¾ lines.

Not rare, but local. Isle of Wight (*E. Lewis*); Cambridge, July (*F. Bond*).

Family 8.—ASOPIDÆ.

Genus 1.—Zicrona, *Am. et Serv.*

Head small, subquadrangular, forwardly narrowed; front straight; side lobes inwardly raised, apex outwardly rounded; central lobe as long as the side lobes, strongly defined; posterior half raised, anterior half depressed; *Crown* a little convex. *Antennæ* moderate, inserted on short stout tubercles before the eyes; 1st joint short; 2nd a little longer than either the 3rd, 4th, or 5th, which in length are subequal. *Eyes* moderate, prominent. *Ocelli* small, distant. *Rostrum* reaching beyond the 2nd pair of coxæ, stout; basal joint broad; rostral channel very short and shallow.

Thorax.—Pronotum a little convex, hexagonal, almost trapezoidal, the hinder sides being short and much deflected; anterior margin deeply concave, angles acute; sides nearly straight; hinder angles raised, obtuse; posterior margin straight. *Scutellum* subtriangular, about half as long as the abdomen; sides sinuate, beyond the middle nearly straight and parallel; apex broadly rounded. *Elytra: Corium* posteriorily deflected; anterior and posterior margins rounded; *Membrane* with 6 or 7 long nerves. *Sternum: Prosternum* on each side with deep, transverse channel; *Mesosternum* with a slight keel. *Legs: fore tibiæ* beneath, with a fine, acute spine; *tarsi* strong; 1st joint as long as the other two, 2nd short.

Abdomen, beneath convex; *Connexivum* moderate, recurved.

Species 1.—Zicrona cœrulea.

Cimex cœruleus, *Lin.* F. S. 250, 933 (1761); S. N. 1, 722, 50 (1767); *De G.* Mem. iii, 268, 11 (1773); *Rossi*, F. E. ii, 237, 1314 (1790); *Fab.* E. S. iv, 123, 166 (1794); S. R. 178, 119 (1803); *Schrk.* F. B. ii, 76, iv (1801); *Wolff*, Ic. Cim. 18, t. 2, fig. 18 (1800); *Panz.* F. G. 32, 14; *Fall.* Mon. Cim. 50, 17 (1807); Hem. Suec. 32, 17 (1826).

Pentatoma cœruleum, *Curt.* B. E. i, 20 (1824); *Hahn*, Wanz. ii, 65, t. 56, fig. 154 (1834); *H. Schf.* Nom. Ent. i, 56 & 92 (1835).

Asopus cœruleus, *Burm.* Handb. ii, 378, 1 (1835); *H. Schf.* Wanz. vii, 112 (1844); *Kolen.* Mel. Ent. iv, 37. 162 (1846).
Zicrona cœrulea et illustris, *Am. et Serv.* Hém. 86, 1 & 87, 2 (1843); *Sahlb.* Geoc. Fen. 19, 2 (1848); *Fieb.* Europ. Hem. 346 (1861).
Asopus (Zicrona) cœruleus, *Flor*, Rhyn. Liv. i, 90, 1 (1860).

Elliptic, pointed in front, entirely glossy blue-green or violet, very finely punctured.

Head.—*Antennæ* black. *Eyes* and *Ocelli* piceous.

Thorax.—*Pronotum* within the anterior margin depressed and strongly punctate; the punctures stronger than on the scutellum and corium; on the first third two lobate, slightly raised, nearly unpunctured spaces; behind these a slight transverse depression; *Scutellum* crenate-punctate. *Elytra: Corium* within the anterior margin, and the *Clavus*, more strongly punctate; *Membrane* dark brown; *Legs* black, with a greenish gloss.

Abdomen, above, at the base, brown.

Length, 2¾ to 3½ lines.

Not very common in the London district; taken flying in woods, in the spring. In moss in winter, Mickleham (*Dr. Power*). Not rare at Scarborough among heather, in April, May, and October, and in the larva state in September (*T. Wilkinson*).

Genus 2.—Jalla, *Hahn.*

Head flattened, quadrangular; *Face* widened before the eyes and then constricted; apex sinuate; end of side lobes rounded; central lobe narrow, nearly as long as the side lobes. *Antennæ* slender; 1st joint stout, very short; 2nd 3½ times longer than the 1st; 3rd ⅔rds as long as the 2nd; 4th a little longer than the 3rd; 5th a little longer than the 4th. *Eyes* moderate; *Ocelli* small, a little wider apart from each other than from the eyes. *Rostrum* very stout, reaching beyond the 2nd pair of coxæ; 1st joint very broad; 2nd joint longest; 3rd and 4th of equal length; rostral channel very short.

Thorax.—*Pronotum* hexagonal, hindwardly convex; front as wide as the head and eyes; anterior margin very concave, angles acute;

sides slightly rounded, margins incrassated; hinder angles obtuse; hinder sides sinuate; posterior margin a little longer than the scutellum is wide, nearly straight, posterior angles deflected, acute. *Scutellum* more than ½ the length of the abdomen, subtriangular; base convex; sides deflected, sinuate, beyond the middle parallel; apex broad, rounded. *Elytra: Corium;* anterior and posterior margins rounded; *Membrane* with 7 long nerves. *Sternum;* on each side a wide transverse oblique channel across the pro- and meso-sternum; *Mesosternum* with a slight central keel in a shallow, narrow channel. *Legs: thighs;* 1st pair beneath with a large spine beyond the middle; *tibiæ* widened at the apex on the upper side, with the margins reflexed, forming a narrow channel; beneath, beyond the middle, with a small, acute spine; *tarsi;* 1st joint as long as the 2nd and 3rd together; 2nd short.

Abdomen semi-elliptic; convex beneath; *Connexivum* moderate.

Species 1.—JALLA DUMOSA.

CIMEX DUMOSA, *Lin.* F. S. 249, 929 (1761); S. N. 1, 721, 46 (1767); *Fab.* E. S. iv, 111, 121 (1794); S. R. 168, 71 (1803); *Panz.* F. G. 33, 18; *Fall.* Mon. Cim. 47, 10 (1807); Hem. Suec. 28, 12 (1826).

JALLA DUMOSA, *Hahn,* Wanz. i, 101, t. 16, fig. 54, 55 (1831); *Am. et Serv.* Hém. 86, 1 (1843); *Kolen.* Mel. Ent. iv, 36, 161 (1846); *Fieb.* Europ. Hem. 347, 2 (1861).

PENTATOMA DUMOSUM, *H. Schf.* Nom. Ent. 1, 53 (1835).

ASOPUS DUMOSUS, *Burm.* Handb. ii, 378, 3 (1835); *H. Schf.* Wanz. vii, 113 (1844).

Elliptic, pointed in front, slightly shining; above fusco-luteous, black-punctured; sides of the *pronotum*, centre of, and two basal spots on, the *scutellum*, margin of the *elytra* and *abdomen*, and a ring on each of the *tibiæ*, vermilion; underside black.

Head black, finely punctured; *Face;* central lobe vermilion, which colour is also continued in a line over the *Crown*. *Antennæ* black, base of the 3rd joint red. *Eyes* black. *Ocelli* red. *Rostrum* deep piceous.

Thorax.—Pronotum; the broad incrassated lateral margins vermilion; anterior half of the disk black, in front and within the lateral margins thickly punctured; in the centre a broad longitudinal line, on

each side of this 3 or 4 raised yellow spots, forming parallel lines, which before their extremity give off a waved yellow line curving to the hinder angles; the portion of the disk posterior to this dull luteous, with deep, distinct punctures, the intervals smooth. *Scutellum* rather strongly punctured; sides posteriorly luteous; apex reddish; in the centre a smooth vermilion line extending ¾ths of the length, broad at the base, gradually narrower, and ending in a fine point; at each side of the base and at some distance from the lateral margins a large suboval, smooth, pale-vermilion spot. *Elytra* fusco-luteous, very finely black-punctured; anterior margin at the base vermilion; *Membrane* light brown. *Sternum* strongly punctured. *Legs* black; *tibiæ* with a broad vermilion ring on the upper half.

Abdomen, above smooth, black; beneath strongly punctured; *Connexivum* black, externally with red spots, the extreme margin vermilion. ♂.

The ♀ is larger and the colours lighter than the ♂.

Length, 5½—6 lines.

Two specimens taken by Mr. H. J. Harding, and one by Mr. Ernest Adams, but they have no note of the locality.

Genus 3.—RHACOGNATHUS, *Fieb.*

Head flattened, quadrangular; *Face*, wider just before the eyes; apex of the side lobes rounded; central lobe narrow, pointed, shorter than the side lobes, leaving a narrow notch. *Antennæ* slender; tubercles short, inserted before the eyes; 1st joint short; 2nd more than double the length of the 1st; 3rd scarcely so long as the 2nd; 4th and 5th subequal, each longer than the 2nd. *Eyes* moderate. *Ocelli* small, a little nearer to the eyes than to each other. *Rostrum* stout, reaching to the 2nd pair of coxæ; 1st and 3rd joints very broad; rostral channel short and shallow.

Thorax.—Pronotum convex, hexagonal; in front as wide as the head and eyes; anterior margin very concave, anterior angles cut off obliquely, exteriorly produced into a small tooth; sides a little concave, widely divergent, the 1st half finely serrate, hindwardly produced into an obtuse point; hinder sides short, nearly straight; posterior margin a little longer than the width of the scutellum, straight, its angles acute. *Scutellum* half the length of the abdomen, subtriangular, sides sinuate, beyond the middle almost parallel, apex

broad, rounded. *Elytra: Corium;* anterior and posterior margins a little rounded; *Membrane* with 7 nerves. *Sternum;* on each side an oblique, transverse channel across the pro- and mesosternum; *Mesosternum* with a slight keel. *Legs: tibiæ* outwardly flat, the fore pair widened at the end, the outer margins reflexed; on the underside a fine, acute spine; *tarsi* hairy beneath; 1st joint broad, as long as 2nd and 3rd together.

Abdomen semi-elliptic, convex beneath; *Connexivum* broad, extending beyond the elytra.

Species 1.—Rhacognathus punctatus.

Cimex punctatus, *Lin.* S. N. i, 720, 34 (1767); *De G.* Mém. iii, 269, 14 (1773); *Fab.* E. S. iv, 95, 62 (1794); S. R. 157, 12 (1803); *Wolff*, Ic. Cim. 179, t. 18, fig. 173 (1811); *Full.* Mon. Cim. 45, 6 (1807); Hem. Suec. 25, 6 (1826); *Zett.* Ins. Lap. 1, 259, 5 (1840).

Eysarcoris punctatus, *Hahn*, Wanz. ii, 69, t. 51, fig. 157 (1834).

Pentatoma punctatum, *H. Sch.* Nom. Ent. i, 56 & 93 (1835).

Asopus punctatus, *Burm.* Handb. ii, 378, 2 (1835); *H. Schf.* Wanz. vii, 112 (1844).

Asopus (Zicrona) punctatus, *Flor*, Rhyn. Liv. i, 91, 2 (1860).

Rhacognathus punctatus, *Fieb.* Europ. Hem. 347.

Luteous, more or less obscured with fine black punctures, sometimes altogether dark, with a greenish tinge; beneath luteous, black-punctured, or black.

Head bronzy or black; *Face;* central lobe a little raised at the base and depressed in front. *Antennæ* black, the extremities of the 2nd and 3rd joints narrowly yellow. *Eyes* brown. *Ocelli* red. *Rostrum* piceous.

Thorax.—Pronotum; in the centre a narrow, longitudinal, yellow line; in pale examples the front and sides black, the lateral margins yellow. *Scutellum;* base rather convex, outer margin depressed; just within the basal angles a deep fovea; down the centre a slight indication of a keel. *Sternum* luteous, black-punctured, the sides black. *Legs: coxæ* yellow; *thighs* black above, yellow at the base and beneath; *tibiæ* black, with a broad yellow ring in the centre; *tarsi* black.

Abdomen, above blue-black, beneath luteous, thickly black-punctured, or entirely black; *Connexivum* black, with yellow spots.

Length, 4—4½ lines.

Not common. Spring and autumn. Haslemere (*Barrett*); Holmbush (*Fenn*); Shirley, Surrey (*E. C. Rye*).

Genus 4.—ASOPUS, *Burm.*

Head flattened, quadrangular; *Face* wider just before the eyes; side lobes recurved, apex rounded, central lobe shorter, leaving a wide, deep notch in front. *Antennæ* in length moderate, slender, each inserted on a very short tubercle before the eyes; 1st joint half the length of the head; 2nd a trifle longer than the 4th; 2nd and 5th shorter than the 4th, subequal. *Eyes* large, prominent. *Ocelli* small, a little wider apart than distant from the eyes. *Rostrum* arising in front of the head, reaching to the hinder coxæ, thick, very wide at the base, 2nd joint longest; rostral channel very short and shallow, hardly perceptible.

Thorax.—Pronotum hexagonal, broader than long, in front as wide as the head and eyes; anterior margin very concave, anterior angles much produced, cut off obliquely and exteriorly produced into a small tooth; sides, in front, strongly serrate, very sinuate, and spreading out into a large, broad, rounded, projecting, and up-curving process; hinder angles rounded; hinder sides long, nearly straight; posterior margin longer than the breadth of the scutellum, straight across the scutellum, but beyond a little produced posteriorly over the clavus; posterior angles acute; disk hindwardly on a level with the scutellum, forwardly deflected at the same angle as the head. *Scutellum* about half as long as the abdomen, triangular; base convex, sides sinuate, apex narrowly rounded. *Elytra: Corium;* anterior margin rounded, posterior margin straight; *Membrane* with 8 nerves. *Sternum: Prosternum;* on each side a transverse channel; *Mesosternum* with a slight keel forwardly widened. *Legs: tibiæ* outwardly flat, margins slightly reflexed, forming a narrow, linear channel; anterior pair, inwardly, beyond the middle with a short spine; *tarsi* strong, 1st joint a trifle longer than the 3rd, 2nd shorter and thinner.

Abdomen semi-elliptic, not very convex; beneath, in the centre of the 2nd segment, a short blunt spine pointing forwards; *Connexivum* broad, extending beyond the elytra.

Species 1.—Asopus luridus.

Cimex luridus, *Fab.* S. E. 701, 25 (1775); E. S. iv, 94, 67 (1794); S. R. 157, 6 (1803); *Panz.* F. G. 92, 9; *Wolff*, Ic. Cim. 136, 130, t. 13, fig. 130 (1804); *Fall.* Mon. Cim. 46, 8 (1807); *Hem. Suec.* 26, 8 (1826).
Arma lurida, *Hahn*, Wanz. i, 97, t. 15, fig. 53 (1831).
Pentatoma luridum, *H. Sch.* Nom. Ent. i, 56 & 92 (1835).
Asopus luridus, *Burm.* Handb. ii, 379, 4 (1835); *H. Schf.* Wanz. vii, 114 (1844); *Fieb.* Europ. Hem. 348 (1861).
Arma luridum, *Kolen.* Mel. Ent. iv, 40, 164 (1846).
Asopus (Podisus) luridus, *Flor*, Rhyn. Liv. i, 95, 5 (1860.)

Luteous, thickly black-punctured, slightly shining, bronzy or metallic blue-black on the *head* and sides of the *pronotum;* beneath luteous, with two distant, longitudinal rows of black spots, and (in the ♀) having a large spot on the 6th segment of the *abdomen.*

Head bronzy or blue-black; *Crown* with two smooth lines reaching to the base of the central lobe; *Face;* central lobe posteriorly a little raised. *Antennæ* black, basal joint beneath luteous, with a central black line, apical half of the 4th joint orange. *Eyes* piceous. *Ocelli* red. *Rostrum* luteous.

Thorax.—Pronotum; the punctures in short series; sides broadly metallic, blue-black; the serrated lateral margins yellow; in the centre of the disk two large, but slight, depressions, bordered in front by a short, raised, smooth line. *Scutellum* punctate-crenate, more or less clouded with black, composed of contiguous punctures, the extreme basal angles depressed, black. *Elytra: Corium;* finer punctured in the centre than at the sides; posteriorly, adjoining the outer nerve, a small smooth space. *Sternum* finely black-punctured; on each side of the yellow mesosternal keel a quadrate smooth space. *Legs* finely haired, rufo-luteous, thickly piceous- or black-spotted; beneath, beyond the middle, a larger black spot; *tarsi* black, 2nd joint and base of the 1st rufous.

Abdomen, above black, beneath luteous, with two distant rows of black spots, one of the spots being at the anterior edge of each segment, and (in the ♀) a larger central black spot on the anterior

edge of the 6th segment; *Connexivum*, above black, with narrow, orange interruptions; beneath yellow with black spots.

Length, 5½ lines.

Not common. August and September, on trees in damp places.

Genus 5.—PICROMERUS, *Am. et Serv.*

Head flattened, quadrangular; *Face;* scarcely widened before the eyes; apex straight, without a notch, outwardly rounded; central lobe as long as the side lobes, not pointed. *Antennæ* long, fine, compressed, inserted on short tubercles before the eyes; 1st joint very short; 2nd long; 3rd, 4th and 5th in length subequal, each scarcely so long as the 2nd. *Eyes* large, prominent. *Ocelli* small, distant. *Rostrum* stout, reaching beyond the 3rd pair of coxæ; basal joint very broad; rostral channel very short and shallow.

Thorax.—Pronotum broader than long, hexagonal, in front as wide as the head and eyes; anterior margin concave; anterior angles much produced and cut off obliquely, externally produced into a small tooth; sides, in front finely serrate, very sinuate, widely divergent, forming a broad, acute, projecting and upcurving spine; hinder sides long, sinuate; posterior margin longer than the scutellum is wide, straight across the scutellum, but beyond a little produced posteriorly and depressed upon the clavus; posterior angles acute; disk forwardly deflected at the same angle as the head, posteriorly on a level with the base of the scutellum. *Scutellum* ⅓ as long as the abdomen, triangular; base convex; sides sinuate; apex narrow, rounded. *Elytra: Corium;* anterior margin rounded, posterior margin straight; *Membrane* with 8 or 9 long nerves. *Sternum* with a side channel extending obliquely across the pro- and mesosternum; *Mesosternum* with a slight keel, anteriorly widened. *Legs* finely haired, anterior *thighs* and *tibiæ* beneath, beyond the middle, with a small spine; all the *tibiæ* outwardly flat, the margin reflexed and forming a narrow, linear channel; *tarsi* hairy beneath, 1st joint as long as the 2nd and 3rd together.

Abdomen semi-elliptic, convex beneath, in the centre of the 2nd segment a short, obtuse process, pointing forwards; *Connexivum* broad, recurved, extending beyond the elytra.

Species 1.—Picromerus bidens.

Cimex bidens, *Lin.* S. N. i, 718, 23 (1767); *De G.* Mém. iii, 259, pl. 13, fig. 9 (1773); *Rossi*, F. Etr. ii, 230, 1297 (1790); *Fab.* E. S. iv, 93, 54 (1794); S. R. 155, 2 (180°); *Panz.* F. G. 26, 22; *Wolff*, Ic. Cim. 7, t. 1, fig. 7 (1800); *Fall.* Mon. Cim. 43, 1 (1807); Hem. Suec. 22, 1 (1826); *Zett.* Ins. Lap. i, 259, 1 (1840).

Arma — *Hahn*, Wanz. i, 92, t. 15, fig. 51 (1831); *Kolen.* Mel. Ent. iv, 39, 163 (1846).

Pentatoma bidens, *H. Sch.* Nom. Ent. i, 56 & 92 (1835).

Asopus — *Burm.* Handb. ii, 379, 6 (1835); *H. Schf.* Wanz. vii, 113 (1844).

Picromerus — *Am. et Serv.* Hém. 84, 1 (1843); *Sahlb.* Geoc. Fen. 18, 1 (1848); *Fieb.* Europ. Hem. 349, 1 (1861).

Asopus (Picromerus) bidens, *Flor*, Rhyn. Liv. i, 92, 3 (1860).

Luteous, thickly black-punctured, often so much as to appear entirely piceous, slightly shining; *head* bronzy: underside rufous or piceous.

Head bronzy; *Crown* with two central, nearly unpunctured lines reaching to the base of the central lobe; *Face;* central lobe posteriorly a little raised. *Antennæ* red, tip of the 5th joint piceous or black. *Eyes* piceous. *Ocelli* red. *Rostrum* luteous.

Thorax.—Pronotum; sides and spines pitchy-black, the serrated lateral margin yellow; on the anterior third of the disk two large, subangular, nearly unpunctured spaces, on their posterior margin a small, smooth, orange spot. *Scutellum* crenate-punctate, clouded with piceous; extreme basal angle depressed, black, within this raised into a small, smooth, yellow spot; apex narrowly orange. *Elytra; Corium* less and more finely punctured than the pronotum; *Membrane* dark brown, nervures strong. *Sternum* luteous, black-punctured; on each side of the yellow mesosternal keel a large, usually black, quadrate spot; on the anterior edge of the *metasternum* a large, lobate, raised, yellow spot. *Legs* rufous, with a pink tinge; *thighs* finely brown-punctate; *tibiæ*, towards the centre yellow; *tarsi;* 1st and 2nd joints pinky red, 3rd piceous.

Abdomen, above piceous-black; beneath rufous or piceous, finely

punctate; *Stigmata* small, beneath each a short, sinuate, impressed line; *Connexivum* punctate, blue-black interrupted with orange.

Length, 5—6 lines.

Common in August and September, on trees and bushes.

Family 9.—RAPHIGASTRIDÆ.

Genus 1.—Tropicoris, *Hahn.*

Head elongate, nearly flat; *Face* widest just before the eyes, then gradually a little narrower to the end, which is rounded; margin of side lobes delicately reflexed; central lobe scarcely so long as the side lobes, which sometimes meet and enclose its fine point. *Antennæ* long, slender; the last two joints thickest; 1st joint not so long as the head; 2nd a little longer than the first; 3rd much longer than the 2nd; 4th not so long as the third; 5th fusiform, rather shorter than the 4th, but longer than the 2nd; 4th and 5th in thickness subequal. *Eyes* large, prominent. *Ocelli* large, distant. *Rostrum* arising at anterior margin, reaching to the 2nd joint of the abdomen; base broad, the remainder narrow, 3rd joint longest; rostral channel shallow, the sides anteriorly ending in a tooth; the margin of the head in front, beneath, with a channel extending to the eyes.

Thorax.—Pronotum hexagonal, much broader than long; front as wide as the head and eyes; anterior margin concave; anterior angles produced and cut off obliquely behind the eyes, exteriorly produced into a small tooth; sides anteriorly very finely serrate, then very sinuate, widely and nearly at a right angle divergent, spreading out into a large, broad, projecting and up-curving process, which on the anterior side is broadly rounded, but posteriorly the apex is produced into a short tooth; hinder sides long, sinuate; posterior margin across the scutellum straight; disk in front flat, deflected at the same angle as the head, hindwardly on a level with the scutellum. *Scutellum* ½ as long as the abdomen, triangular; base convex; sides sinuate; apex narrowly rounded. *Elytra: Corium;* anterior margin sinuate, posterior margin straight; *Membrane* with 6 long nerves. *Sternum: Prosternum;* on each side a transverse channel; *Mesosternum* with a central longitudinal keel, hindwardly widened. *Legs: tibiæ* outwardly flat, the margins reflexed, forming a narrow, linear channel; *tarsi* long, 3rd joint longer than the 1st, 2nd short.

Abdomen long, semi-elliptic, above flat, beneath convex; in the centre of the 2nd segment a short, blunt process, pointing forwards. *Connexivum* broad.

Species 1.—Tropicoris rufipes.

Cimex rufipes, *Lin.* S. N. i, 719, 24 (1767); *De G.* Mém. iii, 253, 2 (1773); *Fab.* E. S. iv, 93, 56 (1794); S. R. 156, 5 (1803); *Wolff*, Ic. Cim. 9, t. 1, fig. 9 (1800); *Fall.* Mon. Cim. 46, 7 (1807); Hem. Suec. 26, 7 (1829); *Burm.* Handb. ii, 366, 7 (1835); *Am. et Serv.* Hém. 149, 1 (1843); *Sahlb.* Geoc. Fen. 30, 13 (1848); *Flor*, Rhyn. Liv. i, 107, 1 (1860).

Pentatoma — *Le P. et Serv.* Enc. x, 55, 13 (1825); *H. Sch.* Nom. Ent. i, 56 & 93 (1835).

Tropicoris — *Hahn*, Wanz. ii, 54, t. 47, fig. 145 (1834); *Kolen.* Mel. Ent. iv, 44, 169 (1846); *Fieb.* Europ. Hem. 330 (1861).

Luteous, thickly black-punctured, shining; beneath orange red; sides of *pronotum* very sinuate, forming in the middle a broad, projecting process.

Head with a bronzy lustre, darker at the sides; *Crown* with two parallel, smooth lines from the base to the central lobe of the face, which posteriorly is raised, its apex flat, depressed. *Antennæ*: first 3 joints and base of the 4th red; the rest piceous or black. *Eyes* brown. *Ocelli* red. *Rostrum* luteous, end of the *labrum* and the 4th joint entirely piceous.

Thorax.—Pronotum; the punctures in short series; front black, more or less mixed with orange; lateral margins and the tooth at the anterior angles orange; lateral process black. *Scutellum* crenate-punctate; close to the basal angles a small whitish or orange spot; apex with a slight channel, nearly unpunctured, broadly orange. *Elytra*: *Corium* exterior to the costal nerve a little recurved; *Membrane* brown. *Sternum*: *Prosternum* finely black-punctured; *Meso-* and *Metasternum* with few punctures; on each side of the yellow mesosternal keel a quadrate smooth space; *Legs*: *thighs* reddish-brown thickly spotted with black; *tibiæ*, inwardly with long fine

hairs; the reflexed margin of the outer side piceous; *tarsi;* tip of the last joint and the claws black.

Abdomen above black; beneath orange red, finely black-punctate, except at the sides and centre; *Stigmata* black, beneath each a long, depressed, black line; *Connexivum* generally extending beyond the elytra, above alternately broadly black and orange, beneath yellowish.

Length, 5½—6 lines.

Common in autumn, on trees and bushes.

Genus 2.—PIEZODORUS, *Fieb.*

Elliptic, subconvex.

Head broad; *Face* subtrapeziform, the sides sinuate; apex without a notch, outer angles rounded; central lobe as long as the side lobes, narrow, slightly defined, a little raised at the base. *Antennæ* slender; tubercle very short; 1st joint half the length of the 2nd; 2nd and 3rd in length subequal; 4th and 5th in length subequal, each a little longer than the 2nd. *Eyes* moderate, not prominent. *Ocelli* distant. *Rostrum* reaching to the 2nd pair of coxæ, slender; sides of the rostral channel slightly produced in front.

Thorax.—Pronotum hexagonal; anterior margin concave, anterior angles produced, cut off obliquely behind the eyes; sides widely divergent, straight, hinder angles rounded, not produced, the disk within them raised; hinder sides straight, deflected; posterior margin slightly concave. *Scutellum* on a level with the pronotum, more than half the length of the abdomen, subtriangular; base convex; sides sinuate, constricted beyond the middle; apex broadly rounded. *Elytra: Corium;* anterior and posterior margins slightly rounded; *Membrane* with 8 nerves. *Sternum: Prosternum;* on each side a slight transverse channel; *Mesosternum* with a central keel. *Legs* rather slender; *tibiæ* on the outer side with a shallow longitudinal channel, *fore tibiæ* internally, in the middle, with a very small, acute spine; *tarsi,* 1st and 3rd joints subequal, 2nd short.

Abdomen above subconvex; *Connexivum* horizontal, widened posteriorly, projecting beyond the elytra. Underside convex, 2nd segment with a long, recurved, appressed spine.

Species 1.—Piezodorus purpureipennis.

? Cimex purpureipennis, *De G.* iii, 258, 5, t. 13, fig. 15 (1773).
— prasinus, *Schr.* F. B. 73, 1105 (1801), nec *Lin.*
Pentatoma purpureipennis, *Hahn*, Wanz. ii, 62, t. 51, fig. 151 (1831).
— Juniperina, *L. Duf.* Rech. Hém. 28 (1833).
Cimex alliaceus, *Germ.* Faun. Ins. ix, 14.
— incarnatus, *Germ.* Faun. Ins. iv, 23.
— lituratus, (*Klug*), *Burm.* Handb. 365, 3 (1835).
Raphigaster purpureipennis, *Ramb.* Faun. And. ii, 125, 1 (1838).
— incarnatus, *Kolen.* Mel. Ent. iv, 56, 183 (1846).
Piezodorus De Geeri, *Fieb.* Europ. Hem. 329 (1861).

Above, deeply, finely, distinctly black-punctured, slightly shining, pale green, or with the *corium* and the base of the *pronotum* purplish; beneath entirely pale green or yellowish; abdomen above black; *legs* yellow.

Head.—*Antennæ* reddish, base paler; *Eyes* and *Ocelli* brown.

Thorax.—*Pronotum;* lateral margins reflexed, yellow; on the 1st third of the disk two transverse, narrow, irregular, smooth, annular spaces, punctured within; sometimes almost obliterated. *Elytra: Corium*, except the anterior portion, punctured finer than the pronotum or scutellum; anterior margin at the base yellowish; *Membrane* reaching beyond the abdomen, colourless, transparent. *Wings* colourless, transparent. *Legs* yellow or greenish.

Abdomen, above black; *Connexivum* greenish or yellowish, interiorly narrowly black. Underside yellowish, greenish, or ochreous, the punctures shallow, confluent; *Stigmata* black; the recurved spine on the 2nd segment reaching to beyond the 2nd pair of coxæ.

Length, 5—6 lines.

Common on furze and broom bushes, in the autumn.

Genus 3.—Acanthosoma, *Curt.*

Head rather narrow, gradually less from the eyes to the apex; central lobe as long or longer than the side lobes, widest at the extremity. *Antennæ* slender; tubercle very short; 1st joint as long or longer than the head. *Eyes* small. *Ocelli* small, distant. *Ros-*

trum slender, reaching beyond the 2nd pair of coxæ; sides of the rostral channel slightly produced.

Thorax.—*Pronotum* hexagonal, hinder angles sometimes much produced. *Scutellum* about half the length of the abdomen, triangular, the apex produced into a long, narrow, smooth point, which has a slight central channel. *Elytra* longer than the abdomen; *Membrane* with 5 or more nerves, some of which at the base spring from a cross nerve. *Sternum* with a deep, thin, central keel; *Prosternum* with a slight transverse furrow, bounded anteriorly by a large callosity. *Legs* slender; *tarsi* 2-jointed.

Abdomen above flattened, with a central keel; *Connexivum* recurved, moderate, on the 6th segment widened and produced posteriorly. Underside convex, with a strong longitudinal keel, terminating on the 2nd segment in a strong spine which projects across the sternum, lying on one side of the sternal keel; the segments, especially in the male, are drawn up in the centre towards the base. *Genital segments:* in the male the 2nd alone is visible on the upperside, very narrow, with the sides carried down to a point within the 6th abdominal segment; in the female the 3rd alone is visible from above as a flat or curved plate, of which the outer margin is more or less rounded, and with a notch in the centre: on the underside in the male two segments are visible, the 1st large, lying in the angle of the 6th abdominal segment, the 2nd very narrow; in the ♀ all three segments are seen, the 1st smaller than in the ♂, the 2nd narrow, the 3rd large, as on the upperside.

Species 1.—Acanthosoma griseum.

Cimex griseus, *Lin.* F. S. 926 (1761); S. N. i, 721, 43 (1767).
— interstinctus, *Lin.* F. S. 927 (1761); S. N. i, 721, 44 (1767); *Fab.* E. S. iv, 116, 141 (1794); S. R. 171, 88 (1803).
— Betulæ, *De G.* Mém. iii, 261, 8, pl. 14, fig. 9 (1773).
— agathinus, *Fab.* E. S. iv, 114, 133 (1794); S. R. 170, 82 (1803); *Fall.* Mon. Cim., 45, 5 (1807); Hem. Suec. 24, 5 (1829); *Zett.* Faun. Ins. Lap. i, 464, 4 (1832); Ins. Lap. 260, 4 (1840).
— achatinus, *Wolff*, Ic. Cim. 58, t. 6, fig. 55 (1801).
Acanthosoma agathinum, *H. Schf.* Nom. Ent. i, 57 (1835).

ACANTHOSOMA GRISEA, *Burm.* Handb. ii, 360, 6 (1835); *Sahlb.* Geoc. Fen. 33, 2 (1848).
— INTERSTINCTUM, *Kolen.* Mel. Ent. iv, 61, 189 (1846).
— GRISEUM, *Dall.* Trans. Ent. Soc. i, n. s. 113, 4 (1851); *Flor,* Rhyn. Liv. i, 102, 3 (1860).
ELASMOSTETHUS GRISEUS, *Fieb.* Europ. Hem. 329, 2 (1861).

Elliptic, angulated in front, reddish-ochreous or greenish; slightly shining, finely but deeply black-punctured; *pronotum* convex; *scutellum* with a black patch at the base; *abdomen* above black; *connexivum* yellow, 6th segment red, the fore and hinder edges of the segments black; in the ♀ the last abdominal segment posteriorly, and the 3rd genital segment entirely, red.

Head slightly convex; *Face,* apex obtuse, rounded; central lobe slightly depressed at the apex. *Antennæ* ochreous or brown, the last joint (except the base) black; 1st joint reaching a little beyond the head, but rather shorter than the other joints, which are subequal. *Eyes* rather prominent, brown. *Ocelli* brown. *Rostrum* reaching beyond the 2nd pair of coxæ; yellow, with a brown central line.

Thorax.—Pronotum; anterior margin concave, anterior angles a little produced and cut off obliquely behind the eyes; sides widely divergent, nearly straight; hinder angles a little produced, very obtuse; hinder sides a little rounded, deflected; posterior margin slightly concave; disk convex, prominent within the hinder angles, in front with a narrow, transverse, smooth space, curving towards the anterior angles; punctures rather close. *Scutellum;* the base convex, with a transverse black patch; the punctures beyond the base distant. *Elytra: Corium;* anterior margin at the base a little incrassated; posterior margin straight, outwardly slightly incrassated; the punctures within the anterior margin stronger and closer than the others; *Membrane* light brown, transparent, with 6 principal nerves, of which the 3 outer ones spring from a curved cross nerve; transversely are two fuscous bands, the 1st near the base, the 2nd beyond the middle, arising from a large fuscous spot on the anterior margin, the colour also extending down the 2nd and 3rd nerves to the posterior margin, but these bands are sometimes partly or wholly wanting. *Wings* diaphanous, with a greenish metallic lustre. *Legs* ochreous; *tibiæ* ochreous or greenish, with fine short hairs; *tarsi* ochreous.

Abdomen above black; on the middle of the 4th segment 2 slight longitudinal keels, divided and bounded by a furrow; on the 5th and 6th segments a stronger keel; *Connexivum* yellow, 6th segment red, the fore and hinder edges of each segment black; the posterior outer angle of the 6th segment in the ♂ is obtuse, in the ♀ acute. *Genital segments:* in the ♂ the 2nd is black and obtusely pointed; in the ♀ the 3rd is red (as also is the 3rd abdominal segment), the posterior margin deeply but widely notched. Underside deep ochreous or reddish; the spine reaching to the 2nd pair of coxæ; *Stigmata* black.

Length, $3\frac{1}{2}$—$4\frac{1}{2}$ lines.

Common on birches, in May and September.

De Geer, in his 'Mémoires' (l. c.), gives a very interesting account of the affectionate care bestowed by a female of this species upon a numerous brood of young ones, exactly after the manner of a hen with her chickens; adding that Modeer had observed it was principally against the attacks of the male that the mother defended her young. Succeeding authors have quoted De Geer without, apparently, having seen the fact stated. But Mr. E. Parfitt, of Exeter, has sent us a female of this species, with several young ones gummed on to the same card, and the following account of them:

"When I first saw the mother sitting in bright sunshine in the midst of her progeny on a birch leaf, I was much struck with the happy appearance of the family; it reminded me at once of the affection I had seen evinced by female *Forficulæ* for their young. The mother would occasionally get up and look around her, apparently to see if any enemy were approaching, and if all was quiet she would sit down again. When disturbed by anything, for instance, by a bit of stick, with which I touched a young one, the mother directly came to its rescue, putting her antennæ down to the little thing and drawing them over it. If that did not do, she would walk round it and endeavour to protect it. I repeated the experiment with some of the other young ones, to see if it was really affection I had witnessed, and she repeated very nearly the same conduct, now and then placing a leg over it. Altogether the little creature showed great excitement, and by running round them appeared exceedingly anxious about her little charges; indeed, I never before saw such affection exhibited by any insect. And I must add that I certainly felt a pang at taking the lives of these creatures,

although if I had not done so, it now turns out, from your remark, the verification of De Geer's observation (which I had never seen) would not have been made."

Species 2.—Acanthosoma dentatum.

Cimex dentatus, *De G.* Mém. iii, 260, 7 (1773).
— hæmagaster, *Schrk.* Enum. Ins. Aust. 270, 520 (1781).
— lituratus, *Fab.* E. S. iv, 114, 134 (1794); S. R. 170, 84 (1803); *Fall.* Hem. Succ. 24, 4 (1829); *Zett.* Ins. Lap. 259, 3 (1840).
— collaris, *Fab.* S. R. 170, 83 (1803).
Pentatoma Stolli, *Le P. et Serv.* Enc. x, 53, 2 (1825).
Acanthosoma hæmatogaster, *Burm.* Hanb. ii, 360, 4 (1835); *Kolen.* Mel. Ent. iv, 59, 187 (1846).
— hæmagaster, *H. Schf.* Nom. Ent. i, 57 (1835); *Sahlb.* Geoc. Fen. 32, 1 (1848).
— dentatum, *Dall.* Trans. Ent. Soc. i, n. s. 111, 2 (1851); *Curt.* Trans. Ent. Soc. i, n. s. 271, 2 (1852); *Flor*, Rhyn. Liv. i, 101, 2 (1860).
Elasmostethus dentatus, *Fieb.* Europ. Hem. 328, 1 (1861).

Elliptic, angulated in front, slightly shining, finely black-punctured, ochreous or greenish on the *pronotum* and *corium*, with the hinder sides of the *pronotum*, the *clavus*, and the inner and posterior margins of the *corium*, broadly blood-red; *abdomen* above black; *connexivum* yellow, the last segment and in the ♀ the 3rd genital segment red. Underside deep ochreous; *stigmata* black.

Head flat; *Face;* central lobe longer than the side lobes, depressed on the apex. *Antennæ* ochreous or brownish, last two joints darker; 1st joint long, passing beyond the head; 3rd subequal; 2nd a little longer than the 3rd; 5th longer than the 2nd; 4th longer than the 5th. *Eyes* rounded. *Ocelli* brown. *Rostrum* reaching to the 2nd pair of coxæ, brownish, the end piceous.

Thorax.—Pronotum narrow in front, anterior margin concave, angles a little produced and sinuate behind the eyes; sides widely divergent; nearly straight; hinder angles a little produced, very obtuse, rounded; hinder sides nearly straight, deflected; posterior margin slightly concave; disk slightly convex, in front flat, ochreous, with a trans-

verse smooth space; hindwardly greenish, the hinder angles tipped with black, the hinder sides broadly, and sometimes the posterior margin narrowly, blood-red. *Scutellum* flat, greenish-ochreous, the base raised, convex, sometimes greenish or reddish. *Elytra: Corium* ochreous or greenish; the inner and posterior margins (also the *Clavus*) broadly blood-red; posterior margin straight, outwardly a little incrassated. *Membrane* transparent, light brown, with a fuscous, triangular spot on the middle of the anterior margin; of the 7 nerves the 4 outer ones spring from a curved cross nerve derived from 2 short parallel ones, joined at their base and forming a cell. *Wings* diaphanous, with a greenish, metallic lustre. *Legs* ochreous; *tibiæ* greenish; *tarsi* brown.

Abdomen above black, the posterior margin of the 6th segment narrowly red; on the middle of the 4th segment two slight, longitudinal diverging keels; between them and on each side a slight furrow; on the 5th segment the two keels, still diverging, are continued, and from their midst a stronger keel rises and is continued across the 6th segment. *Connexivum* yellow, on the 6th segment red, acutely pointed posteriorly. In the ♀ the posterior margin of the 3rd genital segment is nearly straight. Underside reddish-ochreous, the points of the 6th segment red; the spine reaching to the second pair of coxæ. *Stigmata* black.

Length, 4½—5½ lines.

Common on birch trees, in October.

Species 3.—ACANTHOSOMA PICTUM.

CIMEX LITURATUS, *Wolff*, Ic. Cim. 14, t. 2, fig. 14 (1800)?; *Fall.* Mon. Cim. 44, 4 (1807); Hem. Suec. 24, 4 (1829), non *Fab.*

ACANTHOSOMA PICTA, *Newm.* Ent. Mag. i, 287 (1833).

— CLYPEATA, *Burm.* Handb. ii, 361, 7 (1835).

— LITURATUM, *H. Schf.* Nom. Ent. i, 57 (1835); *Dall.* Trans. Ent. Soc. i, n. s. 112, 3 (1851).

— PICTIPENNE, *Curt.* Trans. Ent. Soc. i, n. s. 271 (1852).

CYPHOSTETHUS LITURATUS, *Fieb.* Europ. Hem. 328 (1861).

Elliptic, long-angled in front, glossy apple-green, delicately, concolorously punctured; hinder angles of the *pronotum* scarcely produced, rounded; hinder sides broadly blood-red. *Corium*

with a deep, longitudinal channel along the 1st nerve, outwardly green, inwardly pale blood-red and black-punctured, the red colour crossed by two smooth raised spaces and two foveæ; *Membrane* diaphanous, crossed by a fuscous band. *Abdomen* above black; *Connexivum* green. Underside pale apple-green, delicately concolorously crenate-punctate; *Stigmata* also concolorous.

Head long, angular, slightly convex; *Face;* central lobe rather flattened at the apex. *Antennæ* green; the 3rd and 4th joints at the apex, and 5th entirely, brown; 1st not reaching beyond the head; 5th subequal; 3rd and 4th each a little longer, subequal; 2nd a little the longest. *Eyes* not prominent, green. *Ocelli* reddish. *Rostrum* reaching beyond the 3rd pair of coxæ.

Thorax.—Pronotum; anterior margin concave, in the middle nearly straight; angles a little produced and cut off obliquely behind the eyes; sides divergent, a little concave; hinder angles but little produced, and obtuse; hinder sides nearly straight, much deflected; posterior angles acute, depressed; posterior margin slightly concave; disk in front with a very narrow smooth space, the ends of it curving towards the anterior angles. *Scutellum;* the base convex, black-punctured; the basal angles distinctly pale; posteriorly with the indication of a central keel. *Elytra: Clavus* pale blood-red, concolorously punctured; *Corium* with a deep, narrow channel alongside the costal nerve, ending abruptly; anterior to the channel the colour is green with concolorous punctures, on the inner side of it is a narrow smooth space; the rest of the corium pale blood-red, with close black punctures; across the red portion are two broad, smooth, raised spaces, the first going to the end of the clavus, the second going *from* the end of the channel; between them a wide fovea and another at the end of the channel; posterior margin outwardly broadly rounded, incrassated; *Membrane* diaphanous, with 5 nerves, the 3 outer ones undulating at the base and joined together by a slender cross nerve, which forms 2 cells; across the centre a fuscous band, a spot at the inner basal angle and another on the 2nd outer nerve of the same colour. *Legs* green; *tarsi* piceous-black.

Abdomen above black; in the centre of the 4th segment a wide, shallow furrow, bordered by several minute striæ; upon the 5th and 6th segments a slight keel; *Connexivum;* the side of the last segment prolonged and acute in both sexes. *Genital segments;* in the ♂ *none* are visible from above; beneath, the 2nd segment has the posterior

margin concave, with a tuft of hairs in the centre, and the sides produced into a small, obtuse tooth, not reaching so far as the point of the connexivum; in the ♀ above, the posterior margin of the green 3rd segment is nearly straight, notched in the centre, and there spotted black, the sides rounded off within the points of the connexivum. Underside entirely pale apple-green, delicately concolorously crenate-punctate; the *Stigmata* concolorous.

Length, 4¼ to 4½ lines.

Common on juniper bushes, in autumn and spring.

Species 4.—ACANTHOSOMA HÆMORRHOIDALE.

CIMEX HÆMORRHOIDALE, *Lin.* F. S. 248, 925 (1761); S. N. 720, 35 (1767); *De G.* Mém. iii, 254, 3, pl. 14, fig. 7 (1773); *Schrk.* F. B. ii, 70, 1099 (1801); *Fab.* E. S. iv, 98, 76 (1794); S. R. 160, 27 (1803); *Don.* Brit. Ins. vii, 5, pl. 218, fig. 2 (1798); *Wolff*, Ic. Cim. 10, t. 1, fig. 10 (1800); *Fall.* Mon. Cim. 44, 3 (1807); Hem. Suec. 23, 3 (1829).

CIMEX FABULINUS, *Harris*, Exp. Eng. Ins. 88, pl. 26, fig. 2, (1776).

ACANTHOSOMA HÆMORRHOIDALE, *Curt.* B. E. i, 28 (1824); *H. Schf.* Nom. Ent. i, 57 (1835); *Burm.* Handb. ii, 360, 3 (1835); *Am. et Serv.* Hém. 154, 1 (1843); *Kolen.* Mel. Ent. iv, 58, 186 (1846); *Dall.* Trans. Ent. Soc. i, n. s. 110, 1 (1851); *Flor*, Rhyn. Liv. i, 99, 1 (1860).

PENTATOMA HÆMORRHOIDALIS, *Le P. et Serv.* Enc. x, 53, 1 (1825).

CLINOCORIS — *Hahn*, Wanz. ii, 71, t. 52, fig. 158 (1834).

ACANTHOSOMA — *Fieb.* Europ. Hem. 327 (1861).

Elliptic, angled in front, slightly shining, ochreous or greenish, strongly black-punctured; hinder angles of the *pronotum* much produced; underside ochreous or reddish-ochreous.

Head flat, finely punctured; *Face;* margins of the side lobes rather incrassated; central lobe longer than the side lobes, depressed

on the apex. *Antennæ* pitchy-brown; 1st joint long, passing far beyond the head; 2nd nearly as long as the 1st; 3rd not so long as 2nd; 4th as long as the 1st; 5th as long as the 2nd. *Eyes* not prominent, seen from above triangular. *Ocelli* reddish. *Rostrum* reaching to the 3rd pair of coxæ, yellow, with a central brown line.

Thorax.—Pronotum reddish-ochreous or greenish; anterior margin concave, anterior angles cut off obliquely behind the eyes; sides widely divergent, concave; hinder angles produced into a wide, projecting, obtuse spine; hinder sides long, much sinuate; posterior margin concave; disk with the punctures distant; in front flat, on the 1st third a transverse, smooth, generally interrupted space; hindwardly convex, hinder angles slightly recurved, reddish, the produced apex piceous or black. *Scutellum*, except the apex, marginate; ochreous or reddish-ochreous; punctures distant. *Elytra: Corium* greenish-ochreous, punctured finer and thicker than the pronotum or scutellum; anterior margin incrassated; posterior margin straight, incrassated; *Membrane* light brown, with 7 nerves, and a cross-nerve at the base forming 2 cells. *Wings* coloured like the membrane. *Sternum: legs* ochreous, with very short hairs; *tarsi* piceous.

Abdomen above, on the last segments, with a central keel, which is channeled in the centre; 1st 3 segments black, margins yellow; 4th and 5th the same, but in addition a large yellowish spot in the centre or with the anterior portion entirely yellowish-red; 6th segment, in the ♂ red, with two or three black spots; in the ♀ entirely red; *Connexivum* yellow, on the 6th segment red, or entirely red. *Genital segments:* in the ♂ the 2nd has the sides produced beyond the obtuse ends of the 6th abdominal segment into an acute red spine; in the ♀ the 3rd segment is a broad, red, recurved plate, projecting beyond the acute ends of the 6th abdominal segment.

Length, 7 lines.

Common on birch trees, in September.

Section 2.—*COREINA*.*

Family 1.—COREIDÆ.

Genus 1.—Syromastes, *Latr.*

Broad, stout, elliptic.

Head.—Crown quadrangular, horizontal; at the end, between the antennæ, with two small spines pointing inwards; *Face* triangular, small, vertical, the base only of the central lobe visible from above. *Antennæ:* tubercle short, broad, inserted at the end of the crown on the outer side; 1st joint trigonate, long, strong, curving outwardly, the base attached to the tubercle by a petiole on the outer side; 2nd and 3rd joints cylindrical, longer than the 1st; 2nd longer than the 3rd; 4th fusiform, shorter than the 1st, thicker than the 2nd or 3rd. *Eyes* rather large, round, inserted on the sides of the head, near the base. *Ocelli* equally distant from the eyes and each other, prominent. *Rostrum* strong, reaching beyond the 2nd pair of coxæ, 1st and 2nd joints long; base in a deep channel, the sides of which are in front abruptly produced, hindwardly rounded.

Thorax.—Pronotum hexangular, greatly deflected in front; anterior margin nearly straight, not wider than the head; sides widely divergent, very sinuate, raised, hindwardly reflexed, and then produced into a very broad, horizontal angle; hinder sides long, straight, produced and rounded posteriorly; posterior margin wide, across the scutellum straight; disk in front depressed, hindwardly convex, posteriorly with a transverse ridge longer than the base of the scutellum. *Scutellum* horizontal, flat, short, triangular. *Elytra* not so long as the abdomen; *Corium* with the nerves fine; *Membrane* filled with a network of nerves, which (except 2 or 3 at the inner basal angle) diverge from a cross nerve near the corium, the space intervening forming a large cell. *Sternum* with a narrow rostral channel, deepest on the metasternum; hinder margin of the *Metasternum* much produced over the abdomen. *Legs* strong; *thighs* greatly, but gradually, incrassated; on the underside with a channel, of which the edges are beset with very short blunt spines; *tibiæ* on the upperside with a narrow channel; *tarsi;* the 1st joint as long as the 2nd and 3rd together.

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Abdomen above flat; the last segment in the ♂ posteriorly broadly rounded; in the ♀ the posterior margin deeply concave; beneath very convex within the connexivum; the last segment, in both sexes, retracted and posteriorly deeply cut out. *Connexivum* not covered by the elytra, reflexed, very broad, gradually widened and then narrowed, ending in a short, subacute point. *Genital segments* in the ♂ not visible from above, but beneath one, elliptic and convex, projects through the last abdominal segment; in the ♀, on the upper side, two segments are visible, short, and not so wide as the last abdominal segment, their posterior margins concave, of the last one so much so as to form 2 obtuse points, which project beyond the last abdominal segment; on the underside the last segment is reflexed posteriorly, and the anterior margin in the centre is covered by the cap-like 1st segment, at the sides of which only the projecting points of the 2nd segment are visible.

Species 1.—Syromastes marginatus.

Cimex marginatus, *Lin.* F. S. 923, (1761); S. N. i, 719, 28 (1767); *Scop.* Ent. Carn. 124, 363 (1763); *Rossi*, F. E. ii, 231, 1301 (1790); *Fab.* E. S. iv, 126, 1 (1794); *Wolff*, Ic. Cim. 20, t. 3, fig. 20 (1800).

— auriculatus, *De G.* Mém. iii, 272, 17 (1773).

Coreus venator, *Coqb.* Ill. Ic. ii, 82. t. 19, fig. 7 (1801).

— marginatus, *Fab.* S. R. 192, 6 (1803); *Fall.* Mon. Cim. 56, 1 (1807); Hem. Suec. 36, 1 (1829); *Schill.* Beitr. 38, 1, t. 4, fig. 1 (1829); *Zett.* F. Ins. Lap. i, 466, 1 (1832); *Hahn*, Wanz. ii, 102, t. 61, fig. 185 (1834); *H. Schf.* Nom. Ent. 41 (1835); *Panz.* F. G., 117, 11 (1835); *Zett.* Ins. Lap. 261, 1 (1840); *Rambl.* F. And. ii, 137, 9 (1842).

Syromastes marginatus, *Latr.* Gen. iii, 118, 1 (1801); *Burm.* Handb. ii, 315, 4 (1835); *H. Schf.* Wanz. iv, t. 141, fig. 443 (1839); *Am. et Serv.* Hém. 207, 1 (1843); *Fieb.* Europ. Hem. 228 (1861).

Gonocerus — *Kolen.* Mel. Ent. ii, 51, 11 (1845).

Syromastes (Syromastes) marginatus, *Flor*, Rhyn. Liv. i, 172, 2 (1860).

Light or dark brown, dull, very finely black-punctured throughout. *Antennæ:* 1st joint brown, punctured, and finely but roughly

granulated; 2nd and 3rd red; 4th black. *Eyes* and *Ocelli* brown. *Elytra: Membrane* brown, shining. *Underside* entirely brown, shaded, very finely black-punctured. *Legs: thighs* dark brown by reason of the close black punctures on a light brown ground; *tibiæ* and *tarsi* reddish.

Length, 5½—6½ lines.

Common on various plants, in autumn.

Genus 2.—Enoplops, *Am. et Serv.*

Broad, stout, oval.

Head.—Crown quadrangular, nearly horizontal, convex, with a fine depressed line down the centre, the end produced at each side into a stout, short lobe, which is externally furnished with a short, out-curving spine; *Face* very small, narrow, recurved under the crown; the central lobe inserted between the terminal lobes of the crown, raised, and projecting beyond them, so that, viewed from above, it appears as a deflected spine; on its upper surface are 3 small tubercles. *Antennæ: tubercle* very short, broad, inserted at the end of the terminal lobes of the crown; 1st joint very stout, trigonate, long, curved outwards, base truncate, attached to the tubercle by a very short petiole, produced from the outer side only; 2nd joint longer than the 3rd, almost cylindrical; 3rd joint longer than the 1st, not quite so long as the 2nd, base round, the rest trigonate; 4th joint fusiform, shorter than the 1st, much thicker than the 2nd and 3rd. *Eyes* moderate, round, inserted on the sides of the head, near the base. *Ocelli* equally distant from the eyes and each other, prominent. *Rostrum* strong, reaching beyond the 2nd pair of coxæ; 1st and 2nd joints long; base in a short, deep channel, of which the sides are produced, rounded before and behind.

Thorax.—Pronotum hexangular, greatly deflected; in front wider than the head, anterior margin concave, the exterior angles produced into short spines; sides widely divergent, very sinuate, in front minutely dentate, hindwardly greatly raised, and rather expanded; hinder sides long, with a deep, angular notch, near the upper end, posteriorly gradually rounded into the long posterior margin; disk, in front concave, hindwardly (within the broad hinder angles) convex, posteriorly with a transverse ridge longer than the base of the scutellum. *Scutellum* horizontal, flat, short, triangular.

Elytra not so long as the abdomen; *Corium* with the nerves fine; *Membrane* filled with a network of nerves arranged as in *Syromastes*. *Sternum* with a shallow rostral channel, deeper and wider on the metasternum; posterior margin of the *Metasternum* produced over the abdomen. *Legs* strong; *thighs* not incrassated in the middle, without a channel beneath, unarmed; 3rd pair angulated; *tibiæ* with a fine depressed line on the upper side; *tarsi*, with the 1st joint as long as the other two together.

Abdomen above flat, the last segment with the posterior margin in the ♂ slightly concave and bisinuate; in the ♀ deeply concave, beneath very convex within the connexivum, the last segment with the posterior margin deeply cut out. *Connexivum* not covered by the elytra, reflexed, very broad, gradually widened and then narrowed, the last segment a little constricted in the centre and ending in a long, obtuse point. *Genital segments* as in *Syromastes*, but in the ♀ the last segment is posteriorly produced into two long, broad points, which scarcely project further than the points of the connexivum.

Species 1.—Enoplops Scapha.

Coreus Scapha, *Fab.* E. S. iv, 127, 2 (1794); S. R. 193, 9 (1803); *Coqb.* Ill. Ic. ii, 82, t. 19, fig. 5 (1799); *Wolff*, Ic. Cim. 69, t. 7, fig. 66 (1801); *Curt.* B. E. iv, pl. 174 (1827); *Schill.* Beitr. 39, 2, t. 4, fig. 2 (1829); *Hahn*, Wanz. ii, 103, t. 61, fig. 186 (1834); *H. Schf.* Panz. F. G. 116, 9 (1835); Nom. Ent. 1, 41 (1835); *Ramb.* F. And. ii, 138, 10 (1842); *Kolen.* Mel. Ent. ii, 49, 7 (1845).

Syromastes Scapha, *Burm.* Handb. ii, 315, 3 (1835).

Enoplops Scapha, *Am. et Serv.* Hém. 208, 1 (1843); *Fieb.* Europ. Hem. 230, 1 (1861).

Syromastes (Enoplops) Scapha, *Flor*, Rhyn. Liv. i, 171, 1 (1860).

Above ochreous, entirely covered with fine black punctures, so that the colour appears dull fuscous.

Head black, closely punctured, the lateral margins and anterior spine whitish. *Antennæ:* 1st joint black, finely rugose-punctate, beneath ochreous, black-punctured; 2nd red; 3rd, the base red, the rest black; 4th black. *Eyes* and *Ocelli* brown. *Rostrum* piceous.

Thorax.—Pronotum, lateral margins whitish. *Elytra : Corium;* anterior margin at the base narrowly whitish; *Membrane* brown, shining. *Sternum* ochreous, sparingly black-punctured; *Mesosternum* in the centre, black. *Legs* ochreous; *thighs* with large, confluent black spots, more distinctly marked beneath; *tibiæ* finely haired, a row of small black spots beneath, the extremity piceous; *tarsi* piceous, 1st joint at the base ochreous.

Abdomen above, in the centre, yellow, the sides black; *Connexivum* black, with a small yellow spot close to the outer margin of each segment, larger on the 6th. Underside ochreous, very finely punctured, both concolorously and black, with a row of small black spots on the anterior and posterior margins of each segment, and two large black spots on each side of the centre of the 2nd and 3rd segments; the sides of the *abdomen* and the whole of the *connexivum* more or less fuscous by reason of the close black punctures. *Stigmata* small, yellow, with a black centre.

Length, 5—6 lines.

Local. Folkestone; Scarborough, on *Ononis*, &c. (*T. Wilkinson*); from July to September; Charmouth and Tenby (*Dale*); Newcastle-on-Tyne (*Hancock*).

Genus 3.—Gonocerus, *Latr.*

Elongate, elliptic, a little widened posteriorly.

Head.—Crown elongate, quadrangular, a little deflected, rather convex, with a central depressed line, the end produced into two short, broad lobes, of which the outer angles are oblique and without spines; *Face* small, triangular, deflected more than the crown, the central lobe longest, raised, narrow, and pointed, its base between the terminal lobes of the crown, with a depression on each side. *Antennæ;* tubercle very small and flat, inserted at the end of the crown on the outer side; 1st joint stout, trigonate, long, curved outwards, the base narrower, not petiolated; 2nd and 3rd trigonate, narrower than the 1st; 2nd much longer than the 1st and a little longer than the 3rd; 4th fusiform, shorter than the 1st. *Eyes* large, rounded, prominent, inserted rather below the middle of the sides of the head. *Ocelli* small, prominent, equally distant from the eyes and each other. *Rostrum* reaching the 3rd pair of

coxæ, slender, the base in a short channel, of which the sides are produced, but rounded.

Thorax.—Pronotum hexangular, almost 8-sided, greatly deflected in front; anterior margin not wider than the head, a little concave; sides divergent, concave, hindwardly much raised and rather expanded; hinder sides short, straight; posterior margin, across the base of the scutellum, straight, extended upwards to the hinder sides almost in a straight line; disk in front and centre depressed, rising in a curve to the hinder angles, posteriorly deflected, with a ridge longer than the base of the scutellum. *Scutellum* horizontal, flat, short, triangular. *Elytra* not so long as the abdomen; *Membrane* filled with fine anastomosing nerves, which (except 3 at the inner basal angle) proceed from a cross nerve near the corium, the space there left forming a narrow, angulated cell. *Sternum* with a rostral channel deepest on the *metasternum*. *Legs* moderate; *thighs* not incrassated, unarmed; *tibiæ* outwardly with a fine depressed line.

Abdomen above flat, beneath convex; *Connexivum* moderate, reflexed, covered by the elytra, not widened in the centre. *Genital segments* as in *Syromastes*, but on the upperside, in the ♀, the 2 visible segments are both extended beyond the points of the connexivum, and the last is posteriorly produced (as in *Enoplops*) into 2 broad, flat points.

Species 1.—Gonocerus venator.

Coreus venator, *Fab.* E. S. iv, 128, 4 (1794); S. R. 194, 12 (1803); *Wolff*, Ic. Cim. 21, t. 3, fig. 21 (1800); *Schill.* Beitr. 40, 4 (1829); *H. Schf.* Panz. F. G. 116, 15 (1835).

— chloroticus, *L. Duf.* Rech. 35, 2 (1827).

Gonocerus venator, *Burm.* Handb. ii, 311, 1 (1835); *Am. et Serv.* Hém. 239, 3 (1843); *Fieb.* Europ. Hem. 229, 3 (1861).

Coreus crudus, *Newm.* Ent. Mag. v, 174 (1838).

— (Gonocerus) venator, *Kolen.* Mel. Ent. ii, 51, 9 (1845).

Light brown, dull, very finely black-punctured throughout. *Antennæ* red-brown, finely concolorously punctured. *Eyes* brown. *Ocelli* red. *Rostrum* yellow, the end piceous. *Elytra; Membrane* dark brown, shining. *Underside* entirely flavous, with concolorous

and black, fine punctures. *Legs* flavous; *tibiæ* at the ends, and the *tarsi* red-brown.

Length, 6—6½ lines.

Not common. Box Hill, Surrey, on box trees, in May.

Genus 4.—VERLUSIA, *Spin.*

Narrow and angulated in front, broader behind, and angulated at the sides of the abdomen.

Head.—Crown long, quadrangular, horizontal, slightly convex, with a fine depressed line down the centre, the end produced at each side into a short lobe; *Face* narrow; central lobe inserted between the terminal lobes of the crown, raised, projecting forwards and downwards, so that, viewed from above, it appears as a deflected spine; on its upper surface are 2 small tubercles; side lobes small, compressed, retracted under the crown. *Antennæ;* tubercle very small, flat, inserted at the end of the terminal lobes of the crown; 1st joint stout, long, trigonal, curving outwards; base truncate, attached to the tubercle by a short, stout petiole produced from its outer side only; 2nd and 3rd joints cylindrical, each longer and more slender than the 1st, the 3rd longer than the 2nd; 4th joint fusiform, shorter than but as broad as the 1st. *Eyes* moderate, prominent, inserted below the middle of the sides of the head. *Ocelli* small, nearer to each other than to the eyes. *Rostrum* slender, reaching beyond the 2nd pair of coxæ, the 1st 2 joints longest, subequal; rostral channel short, the sides produced, rounded behind.

Thorax.—Pronotum hexangular (almost 8-sided); anterior margin a little wider than the head, concave, the angles slightly produced; sides widely divergent, slightly concave; hinder angles pointed, slightly raised and expanded; hinder sides long, at first shortly produced and angulated; posterior margin, across the scutellum, straight; disk flat, in front depressed, close to the posterior margin, with a slight transverse ridge. *Scutellum* horizontal, flat, short, triangular. *Elytra* as long as the abdomen; *Clavus* deflected towards the corium; *Corium* raised in the centre, anterior margin slightly reflexed, posterior margin sinuate; *Membrane* filled with anastomosing nerves, which, except 3 or 4 at the inner basal angle, arise from a cross nerve, leaving between it and the posterior margin

of the corium a long narrow cell. *Sternum* with a rostral channel, deepest on the *metasternum*. *Legs* slender.

Abdomen above concave; the last segment in the ♂ broadly rounded behind, with a wide, shallow notch in the centre; in the ♀ the posterior margin deeply concave, produced exteriorly into a point. Underside convex; the 6th segment retracted and squarely cut out for the reception of the genital segments. *Connexivum* not covered by the elytra, very broad in the centre, reflexed in a curve, forming a thin, triangular plate; on the margin with a small triangular notch at the junction of the 4th and 5th and 5th and 6th segments. *Genital segments* in the ♂ not visible above, but beneath one is seen projecting through the last abdominal segment, long, convex, and posteriorly rounded. In the ♀, above, the last 2 segments are visible, both projecting far beyond the points of the *connexivum;* the former with its posterior margin very concave, on each side produced into a lanceolate point; the latter also produced posteriorly into 2 lanceolate points, so that, including the points of the connexivum, the body ends in 6 points: on the underside the 3 segments are visible, the 1st small, convex, and cap-like, resting posteriorly on the 3rd segment; at its sides the broad points of the 2nd segment project from under the last abdominal segment; the 3rd segment projects from below the 1st in the form of a concave plate with a ridge in the centre, and is posteriorly pointed, as on the upperside.

Species 1.—Verlusia rhombea.

Cimex rhombeus, *Lin.* S. N. i, 718, 22 (1767).
Acanthia rhombea, *Rossi,* F. E. ii, 226, 1287 (1790).
Coreus rhombeus et quadratus, *Fab.* E. S. iv, 132, 19 & 20 (1794); S. R. 199, 35 & 36 (1803).
Lygæus quadratus, *Coqb.* Ill. Ic. i, 37, t. 9, fig. 12 (1799).
Coreus — *Wolff,* Ic. Cim. 70. t. 7, fig. 67 (1801); *Fall.* Mon. Cim. 56, 2 (1807); Hem. Suec. 36, 2 (1829); *L. Duf.* Rech. 35, 3 (1827); *Schill.* Beitr. 40, 3, t. 4, fig. 3 (1829); *H. Schf.* Panz. F. G. 118, 12 (1835); *Hahn,* Wanz. ii. 104, t. 61. fig. 187 (1839); *Rambl.* F. And. ii, 137, 8 (1842).
— rhombeus, *Le P. et Serv.* Enc. x, 59, 2 (1825).
Syromastes quadratus, *Burm.* Handb. ii, 314, 1 (1835).

VERLUSIA QUADRATA, *Spin.* Hém. 147 (1837); *Am. et Serv.* Hém. 205, 1 (1843).
COREUS (VERLUSIA) QUADRATUS, *Kolen.* Mel. Ent. ii, 50, 8 (1845).
VERLUSIA RHOMBEA, *Fieb.* Europ. Hem. 229, 2 (1861); *Stål*, K. Vet. Akad. Förh. 204, 1 (1862).

Dull yellowish-brown; above entirely but very minutely black-punctured and granulated.

Head darker. *Antennæ;* 1st joint fuscous or dull reddish, finely punctate-granulate; 2nd and 3rd yellowish-red; 4th black, the tip red. *Eyes* brown. *Ocelli* reddish. *Rostrum* ochreous, tip piceous.

Thorax.—Pronotum; sides ochreous. *Elytra; Membrane* brown, shining. *Wings* pale brown, with darker nerves. *Legs* flavous; *thighs* sometimes darker.

Abdomen above orange; the base black, and a row of black spots down each side; *Connexivum* concolorous with the elytra, with small black spots on the margin. Underside pale ochreous; the *connexivum* and sides of the abdomen pale fuscous, the rest of the abdomen with large, shallow, concolorous punctures.

Length, 4½—5½ lines.

Not rare. On various trees and shrubs, in the autumn.

Genus 5.—COREUS, *Fab., Fieb.*

Elliptic, narrow and angulated in front, granulated.

Head with small distant tubercles, each bearing a hair; *Crown* quadrangular, very convex, rugose, the end widened at each side into a very short, outwardly pointing lobe, within which the tubercle of the antennæ is hidden; *Face* broad, quadrate, deflected; the central lobe narrow, bearing a row of several small tubercles; side lobes rounded in front. *Antennæ* rather short and stout, granulated and closely beset with short hairs, which are very thick at their base; 1st and 4th joints thickest; the 1st and 3rd, in length, subequal; the 2nd and 4th a little shorter; the 4th conical. *Eyes* large, round, prominent, inserted below the middle of the sides of the head. *Ocelli* large, prominent, rather nearer to each other than to the eyes. *Rostrum* reaching beyond the 2nd pair of coxæ, 2nd joint longest; the channel sides produced, short, flat, rounded at each end.

Thorax.—Pronotum deflected, almost flat, subtrapeziform; the sides nearly straight; hinder angles acute and slightly raised; the posterior margin rounded at the ends; both the sides and the posterior margin as far as the scutellum, set with strong projecting spines, each with a hair arising before its apex; disk rugose, with very short obtuse tubercles, each ending with a hair; within the posterior margin suddenly deflected towards the latter. *Scutellum* horizontal, small, triangular; the posterior angle prolonged; the sides with fine, short spines. *Elytra* as long as the abdomen; *Clavus* deflected to the corium; *Corium;* the anterior margin nearly straight, reflexed; the 1st nerve strong, raised; the disk rugose-punctate; *Membrane* filled with nerves, of which 6 arise from a cross nerve, between which and the posterior margin of the corium is left a wide quadrangular cell; beyond their origin the nerves throw out several branches and cross nervures. *Sternum* with a rostral channel, deepest on the *pro-* and *metasternum*. *Legs* short, hinder *thighs* longest, incrassate, spined on the underside; *tarsi;* the 1st joint as long as the other two together.

Abdomen above flat, beneath convex, posteriorly somewhat ridged; the last segment deeply cut out, roundly in the ♂, angularly in the ♀. *Connexivum* not covered by the elytra, broad, reflexed, rounded; on the margin each segment produced into a small, acute tooth; the last segment, in both sexes, posteriorly produced at each side into a broad obtuse spine, which is nearly straight on the inner side. *Genital segments;* in the ♂ scarcely visible above; on the underside one is visible, convex, rounded, ending with a small tubercle. In the ♀, above, two segments are seen, the 1st narrow, 2nd with the sides sloping inwards, and posteriorly truncate; on the underside the 1st segment is lozenge-shaped, projecting on to the 3rd, which is convex and narrow, the end truncate, and not extending beyond the points of the connexivum; of the 2nd, the prolonged sides only are visible, lying on the sides of the 3rd.

Species 1.—COREUS HIRTICORNIS.

COREUS HIRTICORNIS, *Fab.* E. S. iv, 131, 17 (1794); S. R. 198, 31 (1803); *Panz.* F. G. 92, 17; *Le P. et Serv.* Enc. x, 59, 1 (1825); *Fall.* Hem. Succ., 37, 3 (1829); *Rambl.* F. And. 135, 5 (1842); *Am. et Serv.* Hém. 238, 1 (1843).

COREUS HIRTICORNIS et PILICORNIS, *Burm.* Handb. ii, 309, 1 & 2 (1835); *Flor,* Rhyn. Liv. i, 176, 177, 1 & 2 (1860); *Fieb.* Europ. Hem. 221, 4 & 5 (1861).

— AFFINIS, *H. Schf.* Wanz. iv, 97, t. 141, fig. 441 (1839).

? MEROCORIS SERRATUS, *Costa,* Atti, 371 (1847).

DASYCORIS DENTICULATUS, *Dall.* Cat. Hem. 519, 1 (1852); *Stein.* Berl. Ent. Zeits. iv, 248, 3 (1860).

? COREUS WOLFFII, *Gorski,* Anal. 148, 96 (1852).

Above dull, dark cinnamon or chocolate-brown, very rugose, and beset with short stiff hairs; beneath ochreous.

Head.—Antennæ; the 1st 3 joints red-brown; the 4th black, with the tip red. *Eyes* and *Ocelli* dark brown. *Rostrum* dark brown; the produced sides of the rostral channel ochreous.

Thorax.—Pronotum; lateral margins narrowly whitish, the spines also whitish, the spine at the hinder angle longer; the spines on the posterior margin brown, the one on each side of the scutellum the longest and whitish. *Scutellum;* the spines on the sides concolorous or whitish. *Elytra; Corium* with black, rugose, granular points, in longitudinal rows; *Membrane* slightly shining, ochreous, the nerves brown, with pale intervals. *Sternum;* on each side of the rostral channel, on the *mesosternum,* a large black spot. *Legs; thighs* rugose, chocolate-brown, mottled, especially beneath, with ochreous; the 2nd pair beneath with 1 short spine; the 3rd pair darkest, on the underside with several out-curving spines, of which two are much longer than the rest. The 1st long spine is near the tibia, but before it are 4 small ones, the 1st being the shortest, and the 4th only half the length of the long spine; the 2nd long spine is not so long as the 1st, and is at some distance from it; sometimes there is a very small tooth between them. Further back, at the same distance as between the two long spines, a 3rd and 4th shorter spine are sometimes placed, but one or other is more frequently absent: the two long spines have the base broadly, and the apex narrowly, black, the intermediate portion whitish. *Tibiæ* ochreous or reddish, with fine, short, black hairs; *tarsi* ochreous or piceous.

Abdomen above orange-red, the 1st and 2nd segments entirely, and the 3rd at the sides, black. *Connexivum* ochreous or reddish-brown. Underside ochreous, with a central and two lateral brown lines.

Length, 4½ lines.

Not rare. Darenth, Folkestone, on thistles by the roadside, in July; Weybridge, by sweeping grasses, in August; Eltham, in moss on the ground, August.

The chief points of difference between *C. hirticornis*, Fab., and *C. pilicornis*, Klug, according to Flor, are, that the former is "long-haired, the head on the upperside with prominent tubercles between the granules; the side margins of the *pronotum* with strong, pointed teeth, the last on the hinder angles not, or very little, larger than the rest." The latter "is short-haired; the head on the upperside without tubercles; the teeth on the side margins of the *pronotum* small, the last on the hinder angles perceptibly the largest."

Fieber says of *C. hirticornis*, "Hinder thighs with 5 spines, the last and before the middle small" (the presence of the hinder smaller spines we do not find to be constant). Of *C. pilicornis* he says, "Hinder thighs with 2 strong spines and 1 small middle spine." But Flor says that in both species the hinder thighs are toothed exactly alike.

The synonymy is extremely confused. Flor describes both *C. hirticornis*, Fab., and *C. pilicornis*, Klug; yet he says of the former, "This species has very great similarity with the latter, and it is possible that a large number of examples of both species would exhibit transitional characters and make their union necessary."

Stein, in the Berlin 'Ent. Zeit.' for 1860, not only amalgamates the two species, but gives them as synonymous with *Cimex denticulatus*, Scop., *Acanthia denticulata*, Rossi; *Coreus denticulatus*, Wolff; and *Coreus scabricornis*, Panz., attributing their differences to climatic influences over a wide geographical range.

Fieber, on the other hand, has not only kept all as distinct species, but has even placed *Cimex denticulatus*, Scop., in a new genus (*Bothrostethus*).

Among this conflict of opinions, and being without specimens of the species referred to, we believe we have not erred in uniting *C. hirticornis* and *C. pilicornis*.

Genus 6.—SPATHOCERA, *Stein.*

Head finely granulated above and beneath; *Crown* quadrangular, convex, the sides in front produced into a short, sharp spine, within which the tubercles of the antennæ are plainly visible; behind the

eyes constricted into a short, smooth neck; *Face* narrow, vertical, the central lobe prominent, with short spines; side lobes small and short. *Antennæ* short, strong, granulated; 1st joint 3-sided, short, stout; 2nd and 3rd much thinner; the 3rd thickened suddenly, and 3-sided at the apex; 4th pointed-ovate, the apex finely haired. *Eyes* large, flattened. *Ocelli* large, prominent. *Rostrum* reaching to the middle of the *mesosternum*; 1st and 2nd joints long, in length subequal; 3rd and 4th joints shorter, subequal; the base in a short channel, with raised sides.

Thorax.—Pronotum deflected, finely punctured, and granulated, long-trapeziform, in front as wide as the base of the head; sides sinuate, rounded off before the raised hinder angles, which, however, are subacute; the margins narrowly reflexed; hinder margin straight across the scutellum, but roundly produced over the base of the corium; the disk, posteriorly, suddenly deflected to the posterior margin. *Scutellum* cordate, the base deeply concave, with a slight central keel; the apex raised. *Elytra*; *Clavus* deflected to the corium; *Corium* horizontal, nerves prominent; *Membrane* filled with a network of nerves, which radiate from 3 stronger nerves arising from the base. *Sternum* with a narrow rostral channel, ending on the *mesosternum*. *Legs* short, strong, angulated, unarmed; *tarsi*; 1st joint as long as the 2nd and 3rd together.

Abdomen above flat, beneath convex; on the upperside in the ♂ the end is rounded; in the ♀ the last segment has the posterior margin concave, with 2 genital segments projecting beyond in the form of a broad, square, central plate, and an obtuse point at each side of it. On the underside, in the ♂, the last abdominal segment is deeply cut out for the genital segments, which are globose and not projecting; in the ♀, the last abdominal segment has a central depression, with a small keel in its middle, and the posterior margin is concave; the 1st genital segment has a slight central keel in continuation of that on the last abdominal segment, and the posterior margin is nearly straight; the obtuse points of the 2nd segment lie at the sides of the third segment, which is broad and square, as on the upperside, but with 2 on-lying lobes.

Species 1.—Spathocera Dalmani.

Coreus Dalmani, *Schill.* Beitr. 41, 5, t. 1, fig. 1 (1829).
Arenocoris Dalmannii, *Hahn*, Wanz. ii, 112, t. 64 fig. 193 (1834).
Pseudophlœus Dalmanni, *Burm.* Handb. ii, 308, 2 (1835).
Spathocera Dalmani, *Stein*, Berl. Ent. Zeits., iv, 254, 1 (1860); *Stål*, K. Vet. Akad. Förh. 205, 1 (1862).
— Dahlmanni, *Fieb.* Europ. Hem. 216, 2 (1861).

Varies in colour from dull ochreous-brown to fuscous-brown, but always with the sides of the *pronotum* whitish.

Head.—*Crown* with 4 rows of very short, stout spines, and a single similar spine behind each eye. *Antennæ;* 1st joint generally dark brown; 2nd and 3rd dull ochreous, the latter black at the apex; 4th black, the hairs at the apex whitish. *Eyes* dark brown, shining. *Ocelli* reddish-brown, shining. *Rostrum* piceous; the raised sides of the rostral channel ochreous.

Thorax.—*Pronotum* in the centre ochreous, fuscous in front and behind; the side margins thickly set with whitish granulations, the white colour extending the whole length of the sides, but diminishing to a narrow line at the rounding of the posterior angles; on the disk a slight central keel extending from the anterior margin half way up, and on each side of it a longer, higher, and broader ridge, with a deep furrow between them. *Scutellum;* the concave base semicircularly black, divided by a raised ochreous line, the remainder ochreous or fuscous. *Elytra; Clavus* finely punctured in rows; *Corium* very finely granulated, unicolorous, or in light coloured examples with darker spots, and generally a short whitish line on the middle of the hinder margin; *Membrane* fuscous, with darker nerves. *Sternum* ochreous, clouded with brown at the sides, and black in the centre. *Legs; thighs* brown and ochreous, mixed; *tibiæ* ochreous, with 3 faint, narrow rings and the apex brown; *tarsi;* 1st joint ochreous; 2nd and 3rd black.

Abdomen above reddish or fuscous; *Connexivum* reddish-brown, with a lighter spot at the junction of the segments. Underside reddish or fuscous brown, the posterior margins of the segments pale, spotted with black.

Length, 3 lines.

Rare. Hitherto captured in England only by us, at Weybridge, Surrey, under moss, on a sandy hillock, late in August, 1863; and by Dr. Power, at the same place, in May, 1864.

Genus 7.—PSEUDOPHLŒUS, *Burm.*

Long-oval, angulated in front; *head*, *antennæ*, *pronotum*, and *legs* granulated.

Head.—*Crown* short, broad, quadrangular or quadrate, suddenly contracted behind the eyes; in front with the sides produced into a short process, within which are the tubercles of the antennæ; *Face* nearly vertical, triangular; the central lobe longest, raised, with two rows of strong granulations. *Antennæ* short, granulated; 1st joint short, thick, oval, with strong granulations; the base petiolated; 2nd and 3rd much thinner than the 1st, and more finely granulated; the 2nd ¾ths the length of the 1st, and a trifle thicker than the 3rd; 3rd joint 2½ or 3 times longer than the 1st; 4th joint as long and as thick or thicker than the 1st, fusiform, suddenly and greatly constricted just above its insertion, the remainder of the joint having a narrow attachment to the base thus formed (this peculiar structure making it appear as if there were a minute joint between the 3rd and 4th); the basal half of the fusiform portion is granulated and thereby incrassated, while the remainder is finely haired, and, the transition from one part to the other being rather abrupt, the joint has the appearance of an acorn in its cup. *Eyes* round, prominent, inserted below the middle of the sides of the head. *Ocelli* large, very prominent. *Rostrum* reaching to the 2nd pair of coxæ, rather strong; 2nd joint rather longer than the 1st; 3rd and 4th shorter; subequal; the sides of the rostral channel raised, produced for about half the length of the head.

Thorax.—*Pronotum* short, broad, indistinctly hexagonal, the hinder angles being broadly rounded; anterior margin concave, wider than the base of the head, anterior angles acute; sides divergent, nearly straight or concave; hinder angles raised, obtuse; posterior margin nearly straight; disk more or less strongly granulated and punctured; posteriorly a narrow portion is suddenly deflected to the posterior margin. *Scutellum* small, triangular, concave; apex raised, pointed, or bilobed. *Elytra* as long as the abdomen, anterior margin nearly straight; *Clavus* deflected to the corium; *Corium* horizontal; anterior margin slightly reflexed; posterior margin straight; nerves strong, prominent; *Membrane* filled with nerves, which give out anastomosing branches in their course; these mostly proceed from a

strong cross nerve distant from the base of the membrane, where a wide space is left, crossed by 2 or 3 nerves only, near the inner margin. *Sternum* with a deep, rounded rostral channel, ending in a deeper fovea on the *mesosternum*. *Legs* rather short; *thighs* gradually thickened towards the apex; *tarsi;* 1st joint as long as the other 2 together.

Abdomen above flat, beneath convex; the last segment posteriorly cut out for the genital segments—roundly in the ♂, angularly in the ♀, as in *Coreus*, but the angles are not so pointed. *Connexivum* broad, rounded, reflexed, extending upwards beyond the elytra. *Genital segments* as in *Coreus*.

Species 1.—Pseudophlœus Falléni.

Coreus Fallenii, *Schill.* Beitr. 46, t. i, fig. 2 (1829).
Arenocoris Fallénii, *Hahn*, Wanz. ii, 112, fig. 192 (1834).
Atractus literatus, *Curt.* B. E. x, pl. 500 (1834).
Pseudophlœus Fallénii, *Burm.* Handb. ii, 308, 4, 1 (1835).
— Falléni, *Fieb.* Europ. Hem. 217, 138, 1 (1861); *Stål*, K. Vet. Akad. Förh. 267, 1 (1862).

Varies in colour from pale ochreous-gray to chocolate-brown, very slightly shining.

Head with 3 rows of strong granulations, 1 central, and 1 before each of the ocelli. *Antennæ;* 1st joint light or dark brown, more coarsely granulated than the others; 2nd and 3rd yellowish or reddish-brown; 4th black, the last ⅔rds gray, with shining appressed pile. *Eyes*, *Ocelli*, and *Rostrum*, piceous.

Thorax.—Pronotum very deflected, in front depressed; sides very concave, suddenly raised and widened posteriorly, the margins strongly granulated; disk with 2 central, hindwardly diverging, broad rows of large, whitish granulose nodules, with a deep furrow between them, in which, at the front, and also on the exterior of the rows, is a black spot; the rest of the disk strongly punctured and granulated; posterior portion coloured darkest, behind the ridge generally piceous or black. *Scutellum* ochreous or brown, the base depressed, black in most cases; the apex raised into a small, obtuse double point, which is often black. *Elytra; Clavus* strongly, widely punctured; *Corium* strongly, widely punctured in rows; the strong, raised nerves of the ground colour, with short black streaks; between two nervures on the middle of the posterior margin a longish, pale

spot; *Membrane* white, transparent, the nerves white, interrupted by black streaks. *Wings* white, transparent. *Sternum* in the centre black. *Legs* luteous; *thighs* strongly granulated, and on the upper and underside finely serrated, black; *tibiæ* luteous, the apex black; *tarsi;* 1st joint luteous, 2nd and 3rd piceous.

Abdomen above, the 1st 3 segments entirely, and the sides of the 4th broadly, black; the 5th and 6th segments, and the centre of the 4th orange or luteous. *Connexivum* above and beneath luteous, with the junction of the segments and a spot on the centre of the margin of each black. Underside luteous or reddish, with longitudinal black lines, the posterior margin of each segment with small white spots.

Length, 3—3½ lines.

Deal; under the leaves of *Erodium cicutarium*, in August and September. "Braunton Burrows, N. Devon, September" (*Curtis*).

Species 2.—Pseudophlœus nubilus.

Coreus nubilus, *Fall.* Mon. Cim. 58, 4 (1807); Hem. Suec. 39, 5 (1829); *Ahrens*, F. Ins. Eur. 6, 22; *Schill.* Beitr. i, 47, 10, t. 4, fig. 5 (1829).
Arenocoris nubilus, *Hahn*, Wanz. ii, 111, t. 63, fig. 191 (1834).
Pseudophlœus — *H. Schf.* Wanz. vi, 4 (1842).
Bathysolen — *Fieb.* Europ. Hem. 216 (1861); *Stål*, K. Vet. Akad. Förh. 206, 2 (1862).

Dull red-brown, the sides of the *pronotum* nearly straight, reflexed, and whitish in front.

Head.—Crown almost quadrate, the neck short, red-brown, with darker brown granulations. *Antennæ;* 1st joint dull brown, finely granulated; 2nd and 3rd dull yellowish, almost smooth; 4th black, base very finely granulated, upper half with appressed gray hairs. *Eyes* and *Ocelli* brown. *Rostrum* piceous; the last two joints black.

Thorax.— Pronotum subtrapezoidal; side margins reflexed, granulated, yellowish-white on the 1st half; hinder angles broad, obtuse, raised, with a shallow channel within; disk flat, ochreous, covered with small black granules, except 4 or 5 lines of the ground colour lying longitudinally. *Scutellum* pointed, a little constricted before the apex, luteous, fading into whitish at the apex, with a dark spot in the centre of the base. *Elytra; Clavus* and *Corium* ochreous,

but so covered with black granules in rows that they appear, like the *pronotum*, to be dark brown. *Membrane* gray-brown, with dark brown nerves, on which the colour is faintly interrupted with whitish. *Sternum* ochreous, with brown lines or bands. *Legs; thighs* black-brown, faintly spotted with ochreous, granulated; *tibiæ* dull ochreous, except the ends, which are brown; *tarsi;* 1st joint dull ochreous, 2nd and 3rd black-brown.

Abdomen above flat, ochreous; beneath convex, ochreous, with longitudinal brown lines and bands, and the margins of the segments brown. *Connexivum* brown, with an ochreous dash on each segment, near the anterior margin.

Length, 3—3½ lines.

Rare. One specimen taken on the sand-hills at Deal, in August (*Scott*).

Genus 8.—CERALEPTUS, *Costa.*

Head.—Crown convex, subquadrangular, wider in front than behind by reason of the short, obtusely-pointed, outcurving processes; *Face* long, convex, the central lobe longest, narrow; the side lobes wide and outwardly rounded. *Antennæ:* tubercle large, obtuse; 1st joint petiolated, longer than the Crown, cylindrical, slightly curved, the base thinner than the apex; 2nd and 3rd each slightly and gradually thicken to the apex, 2nd in length subequal with the 1st, 3rd a little thicker and longer than the 2nd; 4th scarcely thicker than the 3rd and not so long as the 2nd, fusiform, with the base constricted into the form of a bead. *Eyes* small, rounded. *Ocelli* large, prominent, distant. *Rostrum* reaching across the mesosternum, thick; 1st and 2nd joints longest, subequal; 3rd wider than the 2nd; 4th shorter than the 2nd; rostral channel short, the sides raised.

Thorax.—Pronotum subtrapeziform; anterior angles with a small, short, deflected spine; sides slightly constricted in the middle; hinder angles obtuse, raised, with a small subdentate, projecting margin beneath them; posterior margin nearly straight; disk almost flat, narrowly and suddenly deflected to the posterior margin, with a foveate depression within the hinder angles, going to the sides of the base of the scutellum. *Scutellum* broad, triangular, the apex slightly raised. *Elytra* as long as the abdomen, flat: *Corium* with the first nerve strong; *Membrane,* the nerves (8 or 9 on the margin) not strong but

prominent, springing from a cross nerve distant from the base, the intervening space crossed by 3 nerves; the chief nerves have a few cross nervures between them. *Sternum;* the rostral channel widest on the *mesosternum*. *Legs; thighs* (especially the third pair) gradually thicker towards the end, the apex itself being narrower, the 3rd pair beneath with several spines.

Abdomen above flat; beneath convex; the posterior margin of the 6th segment deeply concave, the sides projecting beyond the short genital segments in a short but acute point: *Connexivum* broad, rounded, subvertical.

Species 1.—CERALEPTUS SQUALIDUS.

CERALEPTUS SQUALIDUS, *Cost.* Cent. 2, 13, t. 4, fig. 7 (1843); *Fieb.* Europ. Hem. 219, 1 (1861).
— LIVIDUS, *Stein.* Berl. Ent. Zeits. 2, 75, 3 (1858).

Elliptic, ochreous, finely granulated, each granule placed in a puncture.

Head.—*Crown* covered with strong black and ochreous granules, except a clear line in the centre and on each side ochreous, the latter extending from the base of the head to the end of the lateral process; *Face* strongly granulated with black and ochreous mixed; the central lobe much raised, the granules in the centre ochreous, and at each side black, forming a line. *Antennæ* strong, set with strong, short appressed hairs; 1st joint thickly granulated with black on an ochreous ground; 2nd and 3rd red, the latter on the upper half covered with black granulations; 4th black, finely granulated, the tip reddish. *Eyes* brown. *Ocelli* ochreous-brown. *Rostrum* pitchy-black; the sides of the rostral channel, and the under side of the head pale ochreous.

Thorax.—*Pronotum;* the sides black, on the first half with strong, black, projecting granules, the lower half gradually margined, white, ending at the hinder angles in a wide tooth; disk ochreous with distant black and ochreous granulated punctures; in front a central, long, black spot, from which a whitish line extends to the posterior margin. *Scutellum* deep ochreous, with black, granulated punctures, the sides narrowly black, the apex white, *Elytra; Clavus* and *Corium* ochreous, with distinct, distant, granulated punctures in

rows; the nerves with alternate black and white granules; the anterior margin on the basal half whitish; *Membrane* light, dull brown; nerves dark brown, faintly interrupted with whitish. *Sternum* pale ochreous, with fine light brown granulations; the rostral channel with a central row of brown dots. *Legs* dull yellow; *thighs;* the base clear; the remainder in the 1st and 2nd pair very finely and distinctly black granulose-punctate; in the third pair the granulations are stronger, and towards the apex agglomerated into a large spot, and a few strong hairs are intermixed. On the underside of the 2nd pair is a very small black tooth; and on the underside of the 3rd pair, towards the end, are 2 large curved spines, white, margined with black, the last being the longer; before the 1st a very small white spine; at the side of the 2nd a small black spine; and beyond the 2nd 2 smaller black spines. *Tibiæ* with fine distant hairs and finely black-punctured; the apex of the 1st and 2nd pair brown; of the 3rd pair, by reason of the stronger and closer punctures, black; *tarsi;* 1st joint ochreous above, piceous beneath; 2nd and 3rd pitchy-black.

Abdomen beneath pale ochreous; finely, concolorously punctured, with a few scattered black punctures. *Connectivum* ochreous, with confluent brown punctures, darker next the margin, where they form a line; the margin itself, and a broad transverse dash on each segment near its anterior margin, clear ochreous.

Length, 5 lines.

Rare. A single example, ♂, found by Dr. Power, at the roots of grass on the sand-hills at Deal, August 24th, 1863.

Family 2.—CORIZIDÆ.

Genus 1.—Therapha, *Am. et Serv.*

Elliptic.

Head.—Crown broad, subquadrate, swollen round the eyes, more especially behind, posteriorly constricted; in front produced at each side into a stout, obtuse, much deflected process, within which is concealed the tubercle of the *antennæ;* disk with a long central, and 2 shorter lateral depressions; *Face* short, broad, triangular; the central lobe broad, raised, the apex obtuse. *Antennæ* short, finely haired, slender; 1st joint stoutest, the base slender, not pe-

tiolated; 2nd, 3rd, and 4th joints, in length subequal; the 4th the thickest of the 3, tapered at each end. *Eyes* large, prominent, inserted at the sides of the head near the base. *Ocelli* large, prominent. *Rostrum* reaching the 3rd pair of coxæ, slender; 2nd joint longest, 3rd shortest; rostral channel with the sides produced, not half the length of the head, acute in front, rounded behind.

Thorax.—Pronotum trapeziform, slightly convex; anterior margin slightly concave, incrassated; sides straight; hinder angles obtuse, slightly raised; posterior margin slightly sinuate. *Scutellum* small, triangular; apex obtuse, prominent; the margins incrassated. *Elytra* as long as the abdomen; *Clavus* deflected to the corium; *Corium;* anterior and posterior margins nearly straight, nerves fine; *Membrane* filled with fine nerves, mostly straight, 6 or 7 arising from a strong cross nerve at the base. *Sternum* with a broad, shallow rostral channel ending in a deep fovea on the *mesosternum; Metasternum* with the posterior margin produced over the 1st abdominal segment, the sides developed into a long obtuse point which lies outside of, and parallel to, the base of the *connexivum*, and is visible from above. *Legs* slender, finely haired; *thighs* slightly thickened; *tarsi*, 1st joint as long as the other 2 together; 2nd shortest.

Abdomen above flat, the last segment broadly rounded in both sexes; *Connexivum* reflexed, of equal breadth throughout, except on the last segment. Underside convex, the last segment in the ♂ slightly retracted and cut out, in the ♀, rounded and as long as above. *Genital segments* only in the ♂ slightly perceptible beneath, being retracted within the abdomen.

Species 1.—Therapha Hyoscyami.

Cimex Hyoscyami, *Lin.* F. S. 945 (1761); S. N. i, 726, 76 (1767); *De G.* Mém. iii, 274, 18, pl. 14, figs. 14 & 15 (1773).

Lygæus — *Fab.* E. S. iv, 149, 47 (1794); S. R. 218, 63 (1803); *Wolff,* Ic. Cim. 27, t. 3, fig. 27 (1800); *Panz.* F. G. 79, 21; *L. Duf.* Rech. 47, 2 (1827).

Alydus Hyosciami, *Schill.* Beitr. 49, 2, t. 5, fig. 5 (1829).

Corizus Hyoscyami, *Fall.* Hem. Succ. 44, 6 (1829); *Curt.* B. E. xi, 481 *a* (1833); *Hahn,* Wanz. i, 18, t. 3, fig. 10, (1831); *Burm.* Handb. ii, 306, 1 (1835); *Ramb.* F. And. ii, 142, 1 (1842); *H. Schf.* Wanz. vi, 1 (1842); ix, 269 (1851); *Kolen.* Mel. Ent. ii, 58, 18 (1845).

THERAPHA HYOSCIAMI, *Am. et Serv.* Hém. 245, 2 (1843).
CORIZUS (THERAPHA) HYOSCYAMI, *Flor*, Rhyn. Liv. i, 196, 5 (1860).
THERAPHA HYOSCYAMI, *Fieb.* Europ. Hem. 232 (1861).

Scarlet, with black spots above and beneath, slightly shining.

Head scarlet, bordered narrowly all round with black, but broader behind the eyes and about the ocelli. *Antennæ* black. *Eyes* pitchy-black. *Ocelli* red. Underside red, the centre of the head and the sides of the rostral channel black. *Rostrum* black.

Thorax.—Pronotum scarlet, the anterior margin and depression, and a large bilobed patch at the base, black. *Scutellum;* the base broadly black, the rest scarlet. *Elytra; Clavus* black; *Corium* scarlet, two small spots near the *Clavus*, and a large, rounded, posterior one, touching the anterior margin only, black; *Membrane* light smoky-brown, the basal angles black. *Wings* light smoky-brown. *Sternum* scarlet, the centre and two round spots on each side black, the base of the lateral metasternal process also black. *Legs; thighs* black, the upper edge (except, sometimes, on the 1st pair) with a narrow ochreous line; *tibiæ* black, beneath with a narrow ochreous line; *tarsi* black.

Abdomen above scarlet, the 1st and 6th segments entirely, and a large, transverse, quadrangular patch on the anterior portion of the 2nd segment, black; *Connexivum* scarlet. Underside scarlet, with a lateral row of round spots and a central row of larger oval spots, black, the spot on the last segment being the largest, and confluent with the side spots on the same segment; *Genital segments* in the ♂, with the visible portion black.

Length 4½—5 lines.

"Charmouth, Teignmouth, Dawlish Warren and Ravenglass, May 20th to July 1st, on thistles and restharrow; Ventnor, 1st August, on *Ononis;* Sandhills, Braunton Burrows, beginning of September" (*Curtis*, l. c.); Tenby, Portland, &c., August and September (*Dale*).

Genus 2.—CORIZUS, *Fall.*

Head.—Crown deflected, broad, subquadrate, incrassated round, and especially behind, the eyes, posteriorly constricted; in front produced at the sides into a short, blunt, deflected process, within which the tubercle of the antennæ is concealed; *Face* vertical,

triangular, short, convex, the central lobe broad and raised. *Antennæ* slender; 1st joint stout, subovate; 2nd, 3rd, and 4th in length subequal; the 4th thicker than the 3rd, fusiform. *Eyes* large, round, prominent. *Ocelli* large, prominent, distant. *Rostrum* slender, reaching beyond the 2nd pair of coxæ; rostral channel short and shallow, with the sides raised in front.

Thorax.—*Pronotum* deflected, trapezoidal, slightly convex, anterior margin narrower than the head, a transverse ridge in front just within the anterior margin, and a fine raised line down the centre, often indistinct; hinder angles obtuse, raised, with a deep depression on the inner side extending to the posterior margin. *Scutellum* short, triangular, the apex raised. *Elytra* as long as or longer than the abdomen; *Corium*, anterior margin straight; posterior margin straight, rounded into the anterior margin; disk flat, more or less transparent; nerves rather strong; *Membrane* transparent, filled with fine, straight, and anastomosing nerves, mostly arising from a strong cross nerve at the base. *Sternum* with a rostral channel on the *meso-* and *metasternum;* the posterior margin of the *Metasternum* produced over the abdomen, at the sides lying alongside the base of the *Connexivum*, and visible from above. *Legs* in length moderate; *thighs* somewhat incrassated, slender at the base; *tibiæ* and *tarsi* slender, the 1st joint of the latter as long as the 2nd and 3rd together.

Abdomen above, flat, the last segment obtusely pointed or rounded; *Connexivum* wide, rounded, reflexed. Underside convex, the last segment not so long as on the upper side. *Genital segments* after death not visible, being retracted within the last abdominal segment.

Species 1.—CORIZUS CRASSICORNIS.

CIMEX CRASSICORNIS, *Lin.* F. S. 952 (1761); S. N. i, 729, 92 (1767).
LYGÆUS — *Fab.* E. S. iv, 168, 114 (1794); *Wolff*, Ic. Cim. 145, fig. 140 (1804).
COREUS — *Fab.* S. R. 201, 46 (1803); *Fall.* Mon. Cim. 58, 5 (1807); *Panz.* F. G. 92, 18.
CORIZUS — *Fall.* Hem. Suec. 41, 1 (1829); *Zett.* F. Ins. Lap. i, 467, 2 (1832); *Burm.* Handb. ii, 306, 4 (1835); *Zett.* Ins. Lap. 261, 1 (1840); *H. Schf.* Wanz. vi, 2 (1842); *Kolen.* Mel. Ent. ii, 61, 23 (1845); *Stål*, K. Vet. Akad. Förh. 208, 3 (1862).

RHOPHALUS CRASSICORNIS, *Schill.* Beitr. i, 50. 1, t. 6, fig. 2 (1829); *Hahn*, Wanz. iii, 2, fig. 227 (1835); *Sahlb.* Geoc. Fen. 45, 1 (1848); *Fieb.* Europ. Hem. 234, 3 (1861).

CORIZUS MAGNICORNIS, *Burm.* Handb. ii, 306, 3 (1835).

CORIZUS (CORIZUS) CRASSICORNIS, *Flor*, Rhyn. Liv. i, 190, 1 (1860).

Fuscous brown or black, strongly punctured.

Head with coarse, confluent punctures, posteriorly with a smooth black ring, the frontal processes very short and deflected, the tubercles of the antennæ just visible within. *Antennæ* rather strong, ochreous, obscured by black punctures, which form a line on the upper side of the first 3 joints, 4th joint black. *Eyes* and *ocelli* ochreous-brown.

Thorax.—Pronotum thickly black-punctured on a scarcely perceptible ochreous ground, the sides slightly sinuate, the lateral and posterior margins, the transverse ridge and the central line, ochreous. *Scutellum* black, with strong confluent punctures, the margin slightly incrassated, constricted before the apex, which is obtuse and concave; the extreme end, a spot on the lateral margin near the base, and sometimes one in the centre, red. *Elytra; Clavus* and *Corium* whitish, transparent, except the anterior margin of the latter, which is ochreous and opaque; nerves reddish, with large, long black spots; *Membrane* and nerves whitish, transparent. *Wings*, transparent. *Sternum* finely punctured, ochreous, the sides brown; the prolongation of the *metasternum* short, sinuate, outwardly rounded. *Legs* ochreous, closely spotted with black, the 3rd pair of *thighs* black above; *tarsi* ochreous, the end of the joints broadly black.

Abdomen above black; 4th segment posteriorly, angularly cut out in the middle, across which a red spot extends joining a smaller red spot on the 3rd and 5th segments; the 5th segment has also two other red spots on the anterior margin, its posterior margin is entirely red; the 6th segment black, with 4 red or reddish spots, whereof two are anterior and oval, two posterior and subquadrate; *Connexivum* black, with orange spots. Underside ochreous, brown-punctured, generally with 4 longitudinal darker lines, and the sides brown.

Length, 3½—4 lines.

Rare. Parley Heath and near Milton, Dorset (*Dale*).

Species 2.—CORIZUS MACULATUS.

CORIZUS MACULATUS, *Fieb.* Beitr. i, 349, 30, t. 2, f. 26 (1836); *H. Schf.* Wanz. vi, 2, t. 181, fig. 559 (1842); *Kolen.* Mel. Ent. ii, 61, 22 (1845); *Gorski*, Anal. 162, 115; *Fieb.* Europ. Hem. 235, 1 (1861).

— LEDI, *Bohem.* Öfv. Vet. Akad. Förh. 51, 3 (1852); *Sign.* Ann. Soc. Ent. France, 3 ser. vii, 94, 30 (1859); *Stål*, K. Vet. Akad. Förh. 208, 4 (1862).

— (CORIZUS) MACULATUS, *Flor*, Rhyn. Liv. i, 193, 3 (1860).

Above yellowish or browish-red, shining; strongly, distinctly punctured, and with fine longish hairs; beneath flavous.

Head strongly, confluently punctured. *Antennæ* pale red, the last joint darker. *Eyes* and *Ocelli* brown. *Rostrum* flavous, beneath with a piceous line. Underside strongly, distinctly punctured.

Thorax.—Pronotum strongly, distinctly punctured. *Scutellum* with strong confluent punctures, the apex obtuse, with the margins incrassated, leaving a hollow within. *Elytra; Clavus* and inner half of the *Corium* whitish, transparent, the anterior half dark brown-red; nerves red, with small black spots; *Membrane* transparent, with a light brownish cloud at the base. *Sternum* with a black spot at the base of each coxa, the sides brownish, with fine, distinct punctures, the centre and the prolonged posterior margin of the *Metasternum* smooth. *Legs* yellowish red, finely haired; *thighs* with minute brown dots; apex of the last joint of the *tarsi*, and the claws black.

Abdomen above reddish-yellow, the margin and large spots projecting inwards, black; the last segment elongated, with 2 or 3 black spots in a line in the centre: *Connexivum* reddish, with a black spot on each segment. Underside flavous, with a row of black spots on each side, and one in the centre, except on the last 2 segments.

Length, 3½—4 lines.

Scarce; 2 specimens, locality unknown.

Species 3.—CORIZUS CAPITATUS.

LYGÆUS CAPITATUS, *Fab.* E. S. iv, 169, 118 (1794); *Wolff*, Ic. Cim. 75, t. 8. fig. 72 (1801).

COREUS — *Fab.* S. R. 201, 49 (1803); *Fall.* Mon. Cim. 59, 6 (1807).

RHOPALUS CAPITATUS, *Schill.* Beitr. i, 51, 2 (1829); *Hahn*, Wanz. iii, 3, t. 74, fig. 228 (1835); *Am. et Serv.* Hém. 246, 1 (1843); *Sahlb.* Geoc. Fen. 46, 4 (1848).

CORIZUS — *Fall.* Hem. Suec. 42, 2 (1829); *Zett.* F. Ins. Lap. i, 467, 2 (1832); Ins. Lap. 261, 2 (1840); *H. Sch.* Wanz. vi, 2 (1842), ix, 269 (1851); *Burm.* Handb. ii, 307, 5 (1835); *Kolen.* Mel. Ent. ii, 62, 25 (1845); *Fieb.* Europ. Hem. 235, 2 (1861); *Stål*, K. Vet. Akad. Förh. 209, 6 (1862).

CORISUS — *Ramb.* F. And. ii, 142, 2 (1842).

CORIZUS (CORIZUS) CAPITATUS, *Flor*, Rhyn. Liv. i, 192, 2 (1860).

Above yellowish or reddish-brown, shining, with very fine longish hairs; beneath red and ochreous.

Head strongly, confluently punctured. *Antennæ* brownish-yellow, or reddish, the last joint brown. *Eyes* and *Ocelli* brown. *Rostrum* piceous.

Thorax.—*Pronotum* finely, confluently punctured, the hinder angles deeper coloured than the disk. *Scutellum* with strong, confluent punctures, the apex almost bilobed, with the margins incrassated, leaving a hollow within. *Elytra; Clavus* whitish, transparent; *Corium* whitish, transparent, except the outer posterior angle, which is red and opaque; the nerves with large black dots; *Membrane* whitish transparent. *Sternum* red-brown, with fine confluent punctures, the centre black; on the *metasternum* at the base of the posterior coxæ, a spot and conjoined semicircle, white; the margin of the produced hinder portion which is seen from above is also white. *Legs* finely haired; *thighs* reddish-brown, with dark brown or black dots; *tibiæ* yellowish, with long black spots; *tarsi* flavous, the end of the joints black.

Abdomen above black; the 3rd and 4th segments with one large oval spot across their margins in the centre; the 5th segment with 2 long spots on the anterior margin, yellowish; the 6th segment elongate, obtusely pointed, the sides broadly yellowish: *Connexivum* black, with broad yellow, transverse intervals. Underside ochreous, the sides, especially at the base, red-brown, sometimes a dark line down the centre, and on the posterior margin of the segments.

Length, 3—3½ lines.

Scarce. Mickleham, by sweeping in September (*Rye*).

Species 4.—CORIZUS PARUMPUNCTATUS.

RHOPALUS PARUMPUNCTATUS, *Schill.* Beitr. 53, 4 (1829); *Hahn*, Wanz. iii, 4, t. 74, fig. 229 (1835); *Panz.* F. G. 117, 10.

CORIZUS — *Sign.* Ann. Soc. Ent. France, 3. s. vii, 85, 13 (1859); *Fieb.* Europ. Hem. 236, 4 (1861); *Stål*, K. Vet. Akad. Förh. 209, 5 (1862).

— PRATENSIS, *Fall.* Hem. Suec. 42, 3, pars (1829).

— (CORIZUS) PRATENSIS, *Flor*, Rhyn. Liv. i, 195, 4, pars (1860).

Reddish or ochreous-brown, shining, very finely haired.

Head with coarse, confluent punctures, a large spot on the incrassation round the eyes, and a small spot at the base of the *ocelli* black. *Antennæ* reddish-yellow, 4th joint brown, the first 3 minutely dotted with brown. *Eyes* brown, *ocelli* reddish.

Thorax.—Pronotum towards the front somewhat depressed, the disk distinctly, widely, brown or black-punctured, and with a delicate central line, the depression within the hinder angles, and generally the anterior margin, black or brown. *Scutellum* reddish, with strong confluent punctures, the lateral margins smooth, incrassated, the apex obtusely pointed, leaving a hollow within, above which and at each basal angle is a black spot; generally, also, the entire base is narrowly black. *Elytra; Clavus* and *Corium* yellowish, transparent, except the anterior margin of the latter, which is sometimes reddish; nerves spotted with black; *Membrane* yellowish, transparent. *Wings* transparent. *Sternum* ochreous, fuscous or reddish, at the sides with confluent punctures, the prolonged posterior margin of the *metasternum* smooth, deeply sinuate. *Legs* ochreous or reddish, dotted with black, more strongly on the 3rd pair; *tibiæ* yellowish, minutely dotted with black: *tarsi* yellowish, the end of the joints and the claws black.

Abdomen above black; a large, somewhat oval, yellow spot, commencing on the 3rd, extends across the 4th segment; 5th segment with 2 central spots on the anterior margin, and two small distant spots on the posterior margin, ochreous; 6th segment ochreous, elongate, posteriorly with the sides parallel, the end truncate, down the centre a strong black mark, and a narrow, pointed one on each side. *Connexivum* ochreous or reddish, the margin with small black

spots. Underside ochreous, the sides fuscous, obscurely punctured, finely haired.

Length, 3½ lines.

Scarce. Deal, August; Weybridge, September (*Scott*); under the leaves of herbaceous plants.

Genus 3.—Myrmus, *Hahn.*

Narrow, elongate, with very short, projecting hairs.

Head a little deflected, convex, the sides parallel; *Crown* quadrangular, base incrassated; the antenniferous processes lower than the facial lobes, short, obtuse, deflected, not projecting, but concealing the tubercle of the antennæ; *Face;* the lobes raised, distinct, the central lobe longest, at the apex broader than the side lobes, the hairs thereon very short, projecting forwards. *Antennæ* of moderate length, with very short, projecting hairs; 1st joint scarcely so long as the crown, the base gradually narrowed inside; 2nd twice as long as the 1st, tapering, the base not so thick as the apex of the 1st; 3rd slightly tapering, nearly as long as the 2nd; 4th fusiform, ⅔rds as long as the 3rd, and thicker; the junction of the 2nd, and 3rd, and 4th, and 5th well defined. *Eyes* moderate, semiglobose, prominent. *Ocelli* moderate, distant, situate at the end of a slight furrow which extends forward, behind the eyes. *Rostrum* reaching the 2nd pair of coxæ, the base in a very short raised channel.

Thorax.—Pronotum slightly convex, trapezoidal; on the 1st third a slight cross swelling; in the centre a fine raised line; hinder angles scarcely raised, but within them a furrow runs out on the posterior margin; posterior margin very slightly concave. *Scutellum* triangular, apex obtuse, sides slightly rounded, margins slightly incrassated and constricted near the apex. *Elytra,* usually with only part of the *corium* and a rudiment of the *membrane;* when developed they are not so long as to cover the abdomen; *Clavus* and *Corium* transparent, nerves prominent; *Membrane* transparent, filled with nerves, which, except two which spring from the inner portion of the posterior margin of the corium, diverge from a central, basal point near to, but not touching, the posterior margin of the corium. *Sternum* with a shallow rostral channel, and a deep hollow in the centre of the *mesosternum; Metasternum* with the posterior margin

a little produced. *Legs* moderate, hinder pair longest; *thighs* not incrassated; all with projecting hairs, shorter than those on the antennæ; *tarsi*, 3rd joint as long as the other two, on the 3rd pair longer.

Abdomen convex, above and beneath, long, narrow, the sides parallel in ♂, slightly curved in ♀; above, the 3rd segment posteriorly deeply cut out at the sides; 4th segment posteriorly, deeply cut out in the centre; 5th segment posteriorly concave; 6th segment, in ♂ elongate, posteriorly rounded; in ♀ truncate; beneath, the posterior margin of all the segments straight; in ♂ the last segment is raised, very convex, much shorter than on the upper side, in ♀ it is also convex, but as long as on the upper side, and the posterior margin forms two sides of a triangle. *Genital segments* retractable within the abdomen, in the ♂ rarely visible, in ♀, 3, gradually narrower, are usually to be seen when the insect is alive.

Species 1.—Myrmus miriformis.

Coreus miriformis, *Fall.* Mon. Cim. 60, 8 (1807).
Lygæus micropterus, *Bur.* Ent. Trans. i, 73, pl. 3 (1807).
Rhopalus miriformis, *Schill.* Beitr. i, 54, 6 (1829); *H. Schf.* Panz. F. G. 121, 11 & 12 (1835); *Stål*, K. Vet. Akad. Förh. 207, 1 (1862).
Corizus miriformis, *Fall.* Hem. Suec. 44, 4 (1829); *Zett.* F. Ins. Lap. i, 467, 3 (1832); Ins. Lap. 261, 3 (1840).
Chorosoma micropterа, *Curt.* B. E. vii, 297, 2 (1830).
Myrmus miriformis, *Hahn*, Wanz. i, 82, t. 13, figs. 46 & 47 (1831); *Burm.* Handb. ii, 312, 1 (1835); *Fieb.* Europ. Hem. 228 (1861).
Chorosoma miriforme, *Flor*, Rhyn. Liv. i, 186, 1 (1860).

Slightly shining, the ♂ pale-brown, more rarely pale-green, with the abdomen reddish; the ♀ pale-green; generally with the *corium* only partially developed and the membrane rudimentary.

Head rugose, with confluent punctures and lines, some of which are black, and with strong, short, black hairs; a black line in the furrow between the facial lobes and sometimes on the lateral processes. *Antennæ* red, 4th joint brown; hairs black. *Eyes* brown. *Ocelli* reddish. *Rostrum* ochreous, with a brown central line.

Thorax.—Pronotum with very short projecting hairs, and rather strong confluent punctures; lateral margins pale; posterior margin

sometimes reddish; disk sometimes with 3 longitudinal, broad, dark lines, the central one being divided by the narrow, pale, raised line. *Scutellum* very finely punctured and haired. *Elytra; Corium* greenish-white, the anterior margin and 1st nerve pale, the other nerves and the posterior margin blood-red; *Membrane* and nerves glossy white. *Sternum* coloured according to the colour of the insect. *Legs* ochreous or greenish tinged with red, with black dots from which spring short, stiff, black hairs; the inside of the apex of the hinder *tibiæ* black; *tarsi* greenish or reddish, the end of the joints black.

Abdomen above, with a thick black line down the centre, (strongest in ♂) interrupted on the 4th segment by a red spot; this line is usually margined with reddish ochreous, but sometimes in the ♀ the central black line is absent; in the ♂ there are generally two fainter dark lines at the sides, the intermediate space being more or less dotted with brown: *Connexivum* green or ochreous, paler at the base. Underside ochreous, pale or dark green, according to the general colour of the insect.

Length, 3½—4½ lines.

Local. Weybridge and Dartford Brent, by sweeping grasses; July; Thorne Moor and Knighton Heath (*Dale*).

Family 3.—CHOROSOMIDÆ.

Genus 1.—Chorosoma, *Curt.*

Narrow, very elongate.

Head nearly horizontal, the sides parallel; *Crown* very elongate, convex; the antenniferous processes lower than the facial lobes; *Face;* the lobes raised, distinct, the central one longest and highest, but slightly narrowest, the apex slightly widened, curved downwards and beset with long projecting hairs. *Antennæ* long, tapering; 1st joint longer than the head, thick, the base thinner as if cut away on the inner side; 2nd ⅓ longer than the 1st, at the base as thick as the 1st, thence gradually tapering; 3rd cylindrical, not quite so long as the 2nd; 4th scarcely thicker than the 3rd, and not so long. *Eyes* semi-globose, distant from the base of the head. *Ocelli* small, rather nearer to the eyes than to each other. *Rostrum* reaching the 2nd pair of coxæ, slender, the first 2 joints

long, the 2nd a little longer than the 1st; the base in a very short raised channel.

Thorax.—Pronotum long, trapezoidal; on the 1st third a slight swelling; the centre with a slightly raised line; hinder angles raised, with a strong depression within them running out on the posterior margin. *Scutellum* narrow, triangular, the apex rounded. *Elytra* not nearly so long as the abdomen; *Clavus* and *Corium* transparent; nerves opaque; the posterior margin of the *Corium* concave, very oblique, forming with the anterior margin a long point; *Membrane* and nerves transparent, the latter numerous, very fine, mostly straight, arising from a basal point, but leaving a large cell at the inner basal angle. *Sternum* with a wide, shallow rostral channel. *Legs* slender, almost smooth, 3rd pair longest; *thighs* gradually a little thicker to the apex.

Abdomen long, narrow, above flat or slightly convex; the last segment in the ♂ subquadrate; in ♀ narrowed behind; *Connexivum* broad, of equal width throughout, reflexed, recurved. Underside semi-cylindrical; the last segment, in ♂, roundly cut out in the centre, in ♀ angularly arched. *Genital segments* obtusely acuminate; above, in ♂ two are visible, in ♀ three; on the underside in ♂, the 3rd projects far beyond the 2nd, of which only the angular points are seen at the sides; in ♀ the 3rd is long, small, cylindrical, the points of the 2nd only being seen at its base.

Species 1.—Chorosoma Schillingi.

Rhopalus Schillingii (*Schumm.*), *Schill.* Beitr. 55, 7 (1829); *H. Schf.* Wanz. iv, 74, t. 131, fig. 402 (1839).
Chorosoma Arundinis, *Curt.* B. E. vii, pl. 297 (1830).
Myrmus Schillingii, *Burm.* Handb. ii, 312, 2 (1835).
Chorosoma — *Am. et Serv.* Hém. 231, 1 (1843); *Stål*, K. Vet. Akad. Förh. 207, 1 (1862).
Rhopalus Arundinis, *Kolen.* Mel. Ent. ii, 57, 17 (1845).
Chorosoma Schillingi, *Fieb.* Europ. Hem. 227 (1861).

Ochreous, finely punctured and haired.

Head pale. *Antennæ;* the first 2 joints covered with very short, appressed hairs. *Eyes* brown. *Ocelli* red. *Rostrum* ochreous, with a central line and the tip brown.

Thorax.—Pronotum finely punctured, the disk light gray. *Scutellum*

finely, confluently punctured. *Elytra; Clavus* and *corium*, except the nerves, glassy, transparent; *Membrane* transparent, iridescent. *Wings* transparent, iridescent. *Legs* delicately haired; the apex of the hinder *tibiæ* on the inner side, all the *tarsi* beneath, and the *claws*, black.

Abdomen above with a gradually narrower line at the sides, black to the end of the 4th segment, brown on the 5th; *Connexivum* unicolorous, ochreous. Underside ochreous, with faint longitudinal reddish lines, stronger at the sides.

Length, 6—6½ lines.

Deal, on long grasses, August; Great Yarmouth (*Dale.*)

Family 4.—STENOCEPHALIDÆ.

Genus 1.—Stenocephalus, *Latr.*

Long, narrow, elliptic, covered with fine short hairs.

Head.—Crown long, narrow, horizontal, convex; the antenniferous processes short, obtuse, not projecting laterally; *Face* triangular, short; central lobe very short, encompassed by the side lobes, of which the points are often separated. *Antennæ* long, finely haired; tubercle small, almost hidden; 1st joint thick, a little curved outwards, base small, apex obtuse; 2nd, 3rd, and 4th of about equal thickness, the 2nd 3 times as long as the 1st, the 3rd ½ the length of the 2nd, the 4th nearly as long as the 2nd. *Eyes* placed at about the middle of the sides of the head, moderate, convex, prominent. *Ocelli* very small, nearer to each other than to the eyes. *Rostrum* reaching the 2nd pair of coxæ, slender, the 2nd joint longest; base in a very short raised channel.

Thorax.—Pronotum slightly convex, trapeziform, narrow in front; hinder angles obtuse, raised; posterior margin a little rounded, with a deep depression within each hinder angle. *Scutellum* large, flat, triangular, the apex pointed. *Elytra* longer than the abdomen; *Corium* flat, the nerves fine; posterior margin nearly straight; *Membrane* hindwardly deflected; the nerves, except at the inner basal angle, mostly straight, and not arising from the base, which, in the centre, has a broad clear space.

Abdomen elliptic; above, flat; last segment posteriorly in ♂ roundly, in ♀ deeply and angularly, cut out; *Connexivum* broad,

reflexed. Underside convex; last segment in ♂ cut out at the sides, and posteriorly, before the margin, constricted; in ♀, the 5th segment is shortest in the centre and raised; the 6th segment flattened at the sides, and in the centre drawn into an angulated ridge; the anterior margin sloping on each side obliquely; posterior margin concave. *Genital segments;* above, in ♂, one large, globose, clasped at the sides by the long points of the 2nd segment: in ♀, one segment is visible, short, narrowed posteriorly, and with the posterior margin short and slightly emarginate; beneath, in ♂, as on the upper side; in ♀, in the centre is one short plate, which appears to be divided into 2 by a strong ridge, the posterior margin concave, so that 2 points project; at the base, on each side, the 2nd segment appears as an angular plate, the point of which is shorter than the central bilobed plate.

Species 1.—STENOCEPHALUS AGILIS.

CIMEX AGILIS, *Scop.* Ent. Carn. 126, 366 (1763); *Schrk.* F. B. ii, 82, 1125 (1801).

— NUGAX, *Fab.* Sp. Ins. ii, 366, 171 (1781); *Rossi,* F. E. ii, 246, 1333 (1790).

LYGÆUS NUGAX, *Fab.* E. S. iv, 162, 93 (1794); *Wolff,* Ic. Cim. 30, t. 3, fig. 30 (1800).

COREUS NUGAX, *Fab.* S. R. 200, 42 (1803); *Lam.* Hist. Nat. iii, 495, 4 (1816); *L. Duf.* Rech. 37, 4 (1827); *Schill.* Beitr., 48, 11, t. 5, fig. 2 (1829).

DICRANOMERUS NUGAX, *Hahn,* Wanz. i, 22, t. 3, fig. 13 (1831).

STENOCEPHALUS NUGAX, *Burm.* Handb. ii, 328, 1 (1835); *Rambʼ.* F. And. ii, 129 (1842).

— AGILIS, *Fieb.* Europ. Hem. 223, 145, 1 (1861).

Brown-black, with a ground colour of ochreous showing through, covered with fine, round punctures.

Head smooth, black. *Antennæ;* 1st joint black; 2nd, the base narrowly, the apex broadly black, the remainder yellow with a faint brown ring in the centre; 3rd and 4th black, narrowly yellow at the base. *Eyes* and *Ocelli* black-brown. *Rostrum* piceous, 1st joint pale yellow; the sides of the rostral channel yellow.

Thorax.—Pronotum brown-black on an ochreous ground colour, darkest in front, finely punctured, the tip of the hinder angles

ochreous. *Scutellum* black or brown, finely punctured, the apex whitish. *Elytra; Corium* coloured like the *Pronotum*, the punctures slightly larger; *Membrane* fuscous brown, with dark, irregular spots between the nerves. *Sternum* black, finely punctured. *Legs; coxæ* yellow; *thighs* finely haired; in the 1st pair the base, in the 2nd pair the basal half, in the 3rd pair more than the basal half, yellow; *tibiæ* yellow, except the base and apex, which are black; with short, black hairs in rows, stronger and more projecting than those on the thighs; *tarsi* black, thickly haired beneath.

Abdomen, above, blood-red, the base and apex black: *Connexivum* above and beneath black, with a yellow spot on the anterior margin of each segment. Underside black.

Length, 5—6½ lines.

Not common. Among *Euphorbium*, on the coasts of Devon, in September (*Stainton*).

Species 2.—Stenocephalus neglectus.

Stenocephalus neglectus, *H. Schf.* Wanz. iii, 55, t. 89, fig. 252 (1836); *Fieb.* Europ. Hem. 223, 145, 2 (1861).

In colour almost identical with *S. agilis*, but this is a more slender and delicate-looking insect; the sides are more parallel, the *antennæ* thinner and longer, and the *membrane* of the elytra *without spots*.

Length, 5—5¾ lines.

Rare: Coasts of Devon.

Family 5.—ALYDIDÆ.

Genus 1.—Alydus, *Fab.*

Narrow, elongate, the sides parallel.

Head thick, very convex above and beneath; *Crown* nearly as broad as the front of the pronotum, but constricted behind the eyes into a short neck; the antenniferous processes, short, small, the ends

not produced; *Face* curved in a line with the crown, long, deflected, triangular, with the sides rounded; central lobe narrow, the apex curved under. *Antennæ* long, slender, of nearly equal thickness throughout; 1st joint as long as the crown of the head; 2nd and 3rd a trifle longer, subequal; 4th as long as the 2nd and 3rd together, curved. *Eyes* large, globose, prominent, placed in the middle of the sides of the head. *Ocelli* large, prominent, approximate, situate in a line with the back of the eyes. *Rostrum* reaching the 2nd pair of *coxæ*, strong, 2nd joint longest.

Thorax stout; *Pronotum* deflected, trapeziform, hinder angles rounded, with a depression within them running out on the posterior margin. *Scutellum* long, narrow, pointed. *Elytra* as long or nearly as long as the abdomen; *Corium* long, narrow, pointed; anterior margin straight; posterior margin very oblique; nerves fine; *Membrane* wide, elliptic, filled with long nerves springing from a nerve which lies close to and parallel with the base except at the inner angle, where are two large angulated cells. *Sternum* strong, broad, with a shallow central channel. *Legs* strong; *coxæ* large; hinder *thighs* gradually a little incrassated with several strong spines beneath.

Abdomen narrow at the base; above flat; the last segment in ♂ wide, posterior margin broadly rounded; in ♀, slightly cut out in the centre; *Connexivum* wide, vertical. Underside convex, the 3rd segment very long; the last segment posteriorly, in ♂ broadly and squarely, in ♀ less, and roundly, cut out. *Genital segments*, above, in ♂, only appear as 3 keels projecting hindwardly; in ♀ but one segment is visible, short, the sides narrowed, and the posterior margin truncate; beneath, in ♂, one segment is visible, short, convex, ending in 3 short and spinous processes; in ♀ also only one segment is usually seen, short, convex, and obtusely pointed; but sometimes the ends of the other 2 segments are visible.

Species 1.—ALYDUS CALCARATUS.

CIMEX CALCARATUS, *Lin.* F. S. 968, (1761); S. N. i, 732, 114 (1767); *De G.* Mém. iii, 280, 24, pl. 14, figs. 23 & 24 (1773); *Rossi*, F. E. ii, 243, 1327 (1790).

LYGÆUS CALCARATUS, *Fab.* E. S. iv, 162, 94 (1794); *Wolff*, Ic. Cim. 144, t. 14, fig. 138 (1804).

ALYDUS CALCARATUS, *Fab.* S. R. 251, 15 (1803); *Le P. et Serv.* Enc. x, 61, 1 (1825); *Fall.* Hem. Suec. 40, 1 (1829); *Schill.* Beitr. 49, 1 t. 5, fig. 1 (1829); *Hahn*, Wanz. i, 198, t. 32, fig. 101 (1831); *Curt.* B. E. viii, pl. 369 (1831); *H. Schf.* Panz. F. G. 121, 10 (1835); *Burm.* Handb. ii, 323, 1 (1835); *Zett.* Ins. Lap. 262, 6, 1 (1840); *Am. et Serv.* Hém. 226, 1 (1843); *Flor*, Rhyn. Liv. i, 183, 1 (1860); *Fieb.* Europ. Hem. 226, 1 (1861).

— HIRSUTUS, *Kolen.* Mel. Ent. ii, 64, 26, t. 8, fig. 8 (1845).

Fuscous black, through which the dull ochreous ground colour indistinctly shows; more clearly seen on the *corium* of the expanded *elytra*.

Head finely punctured, and with fine, long, black, projecting hairs. *Antennæ* with fine, short, projecting, black hairs; 1st joint black, except a long, yellow streak on the inner side; 2nd and 3rd ochreous, with the base yellow and the tip broadly black; 4th, black, with the base narrowly yellow. *Eyes* black. *Ocelli* red. *Rostrum* pitchy-black.

Thorax.—*Pronotum* very finely punctured, and with distant, projecting hairs, shorter than those on the head. *Scutellum* black, finely punctured, the apex ochreous. *Elytra; Corium* very finely black-punctured; *Membrane* semi-transparent, smoke-brown, with darker nervures. *Wings* transparent, with a green and purple metallic gloss. *Sternum* black, finely punctured, and with fine, mostly appressed, gray hairs. *Legs* with distant black hairs; *Coxæ* piceous; *thighs* black, the hinder pair with 3 strong, curved spines beyond the middle, and several other smaller spines; viz., one before the middle, one between the 1st and 2nd, and 2 or 3 gradually smaller, beyond the 3rd large spine; the small spines are often (accidentally) more or less wanting; *tibiæ* with the hairs closer and stronger than on the thighs, 1st and 2nd pair ochreous, with the apex broadly black or piceous, 3rd pair ochreous-brown; *tarsi* black or piceous, with nearly half of the 1st joint ochreous.

Abdomen above; the 3rd and 4th segments and the anterior portion of the 5th, orange, with the sides narrowly black; the remainder entirely black; *Connexivum* black, with a yellowish spot on the anterior margin of each segment. Underside black, shining, with short, distant, projecting black hairs.

Length, 5½—5¾ lines.

Not rare. Weybridge on *Ulex nanus*, September; Isle of Wight, July, (*G. Lewis*); Plumstead Common, among heath, August and September; Folkestone, on *Ononis*, September; Scarborough (*T. Wilkinson*).

Section 3.—*BERYTINA.**

Family 1.—METACANTHIDÆ.

Genus 1.—Metacanthus, *Costa.*

Head short, broad; *Crown* globose, with a single deep impression at the base; *Face* vertical, small, triangular. *Antennæ* very long, filiform; 1st joint longest, slightly incrassated at the top; 2nd about half the length of the 1st; 3rd as long as the 2nd; 4th nearly half the length of the 3rd, thickened, fusiform. *Eyes* large, globose, prominent. *Ocelli* large, distant, inserted at the sides of the head just before the pronotum. *Rostrum* reaching to the end of the metasternum, 2nd joint longest; rostral channel deepest and widest at the extremity.

Thorax very thick; *Pronotum* much deflected forwards, long trapezoidal; anterior margin thick, prominent, sloping from the centre to the ends, which terminate in a rounded, projecting nodule; disk in front smooth, with a small central nodule, behind which is a deep transverse impression, the remainder of the disk very convex, with a fine raised line up the centre ending at the top in a large sharp nodule, and with a similar but smaller and more obtuse nodule at each hinder angle; hinder angles rounded; posterior margin sub-angularly concave, narrowly reflexed. *Scutellum* triangular, narrow, pointed, the base with a long projecting suberect, back-curving spine. *Elytra* horizontal, longer and broader than the abdomen, covering the connexivum; *Corium* diaphanous, narrow, the posterior margin on each elytron not meeting each other at the end of the *clavus*, but divergent, and carried forward for some distance in an outwardly curving line, then sinuate and extended long, straight, and slender to a point; *Membrane* broad, oval, transparent, with 5 nearly straight nerves. *Sternum* with the rostral channel deep and wide, ending on the metasternum; the odoriferous orifice on the *meso-sternum* produced as a short, upturned spine. *Legs* very long;

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thighs towards the top gradually clavate and then a little constricted; *tibiæ* filiform; *tarsi* slender, 1st joint as long as the other 2 together.

Abdomen long, elliptic, convex beneath; *Connexivum* broad. *Genital segments;* in the ♂, the only one visible is small and rounded; in the ♀ the last abdominal segment has a central hump, whence a ridge proceeds to the end of the genital segments, bisecting them; of the 1st and 2nd segments, however, only the points are visible at the sides of the 3rd.

Species 1.—METACANTHUS PUNCTIPES.

BERYTUS PUNCTIPES, *Germ.* F. Ins. 7, 21 (1821?).
NEIDES ELEGANS, *Curt.* B. E. iv, pl. 150 (1827); *Spin.* Hém. 206, 4 (1840).
BERYTUS ANNULATUS, *Burm.* Handb. ii, 314, 4 (1835).
METACANTHUS ELEGANS, *Costa,* Atti, 7, 258 (1847); *Fieb.* Europ. Hem. 214 (1861).
GAMPSOCORIS TRANSILVANICA, *Fuss.* Mitth. d. Ver. zu Hermannstadt, 7 (1852).

Dusky, ochreous.

Head; Crown and *Face* black, shining; *Antennæ* yellow, the 1st joint with several, the 2nd with few black rings, 3rd black at the base, 4th black. *Eyes* and *Ocelli* dark brown.

Thorax.—Pronotum; anterior margin whitish, the first 4th of the disk abruptly black, shining, unpunctured, in the centre depressed, and with a small yellow nodule; the remainder of the disk shining, covered with equidistant, round punctures, with a fine, raised, smooth line up the centre; all the 3 posterior nodules black; the posterior margin whitish. *Scutellum;* the spine white. *Elytra;* in the membrane a longish, light fuscous dash between the ends of the 2nd and 3rd nerves. *Sternum* black, the mesosternal spiracular spine whitish, with a dark line beneath. *Legs* yellow with black rings; the clavate end of the thighs ochreous with a fuscous cloud; *tarsi;* 1st joint yellow, 2nd and 3rd black.

Abdomen above black; *Connexivum* yellowish. Underside dull ochreous, the base black.

Length, 2 lines.

Common under *Ononis* in August and September, Folkestone; Deal; Coasts of Devon (*Stainton*).

Genus 2.—METATROPIS, *Fieb.*

Head.—Crown quadrangular, in front a large nodule prolonged hindwardly in a keel, at the end of which, at the base of the head, is a depression between the ocelli; *Face* deflected, broad, curved, all the lobes broad, the central one much the longest. *Antennæ* inserted, above the front of the eyes, filiform; 1st joint very long, at the top gradually clavate; 2nd and 3rd at the top scarcely thickened, the 2nd nearly $\frac{1}{2}$ as long as the 1st, the 3rd nearly $\frac{2}{3}$rds as long as the 1st; 4th long-fusiform, $\frac{3}{4}$ the length of the 2nd and twice as thick. *Eyes* large, oval, little projecting. *Ocelli* small, approximate, inserted on the base of the head. *Rostrum* reaching beyond the 2nd pair of coxæ.

Thorax thick: *Pronotum* greatly deflected to the front, long-trapeziform, almost hexangular by the hinder angles being cut off straight; the sides 3 times constricted, the 1st slightly, immediately behind the anterior margin, the 2nd deeply at about $\frac{1}{3}$ of the length, the 3rd just before the hinder angles; disk in front but slightly convex, with a cross impression opposite the 2nd lateral constriction, in front of which are 2 small nodules; hinder portion very convex, but hindwardly, flatly and broadly deflected to the posterior margin; up the centre is a raised line gradually increasing in height till it forms a rounded ridge which decreases somewhat suddenly, and ends before it reaches the posterior margin; within each hinder angle, in a line with the top of the central ridge, a large nodule; posterior margin slightly concave. *Scutellum* long, narrow, triangular, the base convex, with an obtusely pointed nodule in the centre. *Elytra* in repose horizontal, narrower in the middle than at the base, and wider behind; *Corium* narrow, diaphanous, with strong nerves, the posterior margins not meeting at the end of the clavus, but diverging, nearly straight, and prolonged to a long point; *Membrane* transparent, broad, hindwardly rounded; the 1st nerve short, curved; the 2nd long; the 3rd springs feebly from the 4th, at about $\frac{1}{3}$ its length, but is stronger towards its end; 4th and 5th joined together at the base. *Sternum;* rostral channel broad. *Legs* filiform, the top of the thighs gradually incrassated; *tarsi;* 1st joint as long as the other 2 together.

Abdomen long-oval, narrow at the base, above flat, beneath

convex. *Genital segments* in both sexes rounded posteriorly without processes.

Species 2.—METATROPIS RUFESCENS.

BERYTUS RUFESCENS, *H. Schf.* Nom. Ent. i, 43, (1835); *Panz.* F. G. 135, 8.
— ELEGANS, *Burm.* Handb. ii, 313, 3 (1835.)
NEIDES SIEBERI (*De Cristofori*), *Spin.* Hem. 206, 3 (1840).
BERYTUS ANNULATUS, *Gorsk.* Anal. 141 (1852).
METATROPIS RUFESCENS, *Fieb.* Wien. Ent. Monats. iii. 207 (1859); Europ. Hem. 213 (1861); *Scott*, Ent. Ann. 156, fig. 6, (1862).
BERYTUS (BERYTUS) RUFESCENS, *Flor*, Rhyn. Liv. i, 208, 4 (1860).

Light brown, shining.

Head paler, beneath black. *Antennæ* yellow; the 1st joint with many black dots, the club, except at its point, piceous; the 3rd joint with distant, very fine hairs; the 4th joint black, the apex brown. *Eyes* black. *Ocelli* red shining. *Rostrum* pale.

Thorax.—Pronotum (except on the central ridge) in the middle with a large black spot, which at the front is straight, at the sides does not quite touch the margin, and hindwardly is intersected by a dash of the ground colour. *Scutellum* diaphanous, except the nodule, which is brown. *Elytra; Corium* diaphanous, smooth, the nerves reddish brown; *Membrane* light brown, transparent, glossy, the nerves opaque. *Sternum*, in the centre, black. *Legs* pale yellow with black dots; *thighs* with the club brown, except at the apex; *tibiæ* with the lower end brown, the dots closer and finer than on the thighs; *tarsi;* 1st joint yellow, 2nd and 3rd piceous.

Abdomen; the base black, the remainder reddish-brown; *Connexivum* pale. Underside dark brown, the segments with paler margins.

Length, 4—4½ lines.

Hitherto rare in England, only a single specimen having been captured. It was taken by Mr. Wollaston near Pangbourn.

Family 2.—BERYTIDÆ.

Genus 1.—Berytus, *Fab.*, *Fieb.*

Long, narrow, more or less linear.

Head long, subquadrangular, in front narrower than at the base, across the disk, near the centre, a slight but sharp incision, behind which are the *ocelli*. From between the *ocelli* begins a process which gradually rises, and mostly widens a little, and is then narrower to the end, which far overreaches the face; viewed sideways, it is a vertical more or less rounded plate, curved under until it meets the face, which it often joins. From the ocelli forwards, on each side of the frontal process, but not so long, the sides of the head are distinctly lobe-formed, and at the end of these lobes the *antennæ* are inserted; *Face* short, narrow, vertical. *Antennæ* long, filiform; 1st joint thickest, not so long as the head and pronotum together, the upper end clavate; 2nd not so thick as the 1st, and about $\frac{1}{8}$th its length; 3rd the thinnest, as long or longer than the 1st; 4th about twice as long as the 2nd, fusiform, the base thin, narrower than the apex of the 3rd. *Eyes* round, flattened. *Ocelli* very small. *Rostrum* reaching only over the prosternum, 1st and 2nd joints together not so long as the head; rostral channel in front with the margins raised for a very short distance.

Thorax.—Pronotum long-trapezoidal, narrowed at the hinder angles, within them raised more or less and then posteriorly deflected; the lateral margins reflexed, keel-formed; the disk with a central keel throughout, its end and the ends of the lateral margins prolonged beyond the anterior margin. *Scutellum* triangular, the base covered by the pronotum, the apex prominent. *Elytra* longer than the abdomen; *Corium* opaque, prolonged to a point; the nerves strong, straight, the two central ones rounded or recurved into the posterior margin; the space between the nerves with a row of deep punctures slightly separated; *Membrane* diaphanous, finely crenate, the nerves nearly straight, at the base curved. *Sternum;* rostral channel continued to the end of the metasternum, widest on the mesosternum; anterior *coxæ* approximate, posterior *coxæ* very distant. *Legs* long, 3rd pair very long; *thighs* clavate; *tibiæ* thin; *tarsi*, 1st joint as long as the other 2 together, the 2nd very short.

Abdomen flat above, very convex beneath, the posterior margin of the 6th segment straight. *Genital segments* closely joined to each other, and to the last abdominal segment, the junction difficult to distinguish; above, in the ♂ one, in the ♀ two (*i. e.* the 2nd and 3rd) are visible. On the underside, in the ♂, the visible segment is wide, convex, caplike, the sides, posteriorly, forming two distant, lobe-like processes; in the ♀ the 1st of the 2 visible segments is ridged in the centre and posteriorly produced, the sides retracted; the 2nd of the segments is posteriorly narrowed, cleft in the centre, and ends in two lobe-like processes lying close together.

Species 1.—BERYTUS SIGNORETI.

BERYTUS SIGNORETI, *Fieb.* Wien. Ent. Monats. iii, 204; 1 (1859); Europ. Hem. 210, 1 (1861).

Ochreous. *Frontal process* above, straight, the end rounded. *Antennæ;* 1st joint, club stout, scarcely darker than the rest of the joint, 3rd at apex, 4th entirely, black. *Pronotum* deflected to the front, the posterior ½ slightly convex. Apex of the *Clavus* and *Corium* and a long, pointed spot at the base of each nerve of the *Membrane* pitchy black; *Membrane* broader than the *Corium*, posteriorly very broadly rounded. *Thighs* gradually clavate, yellow throughout; *tarsi;* 1st and 2nd joints yellow.

Head; frontal process moderate, above straight, the end rounded, viewed sideways somewhat semi-oval; the side processes narrow, somewhat widened before the eyes. *Antennæ* ochreous; 1st joint, club abrupt and of equal thickness throughout, a shade darker than the rest of the joint; 3rd, the extremity widened and pitchy black; 4th black. *Eyes* red brown. *Rostrum* yellowish, the end piceous or black.

Thorax.—Pronotum deflected to the front, flat or a little depressed on the first third, slightly widened at the hinder angles, and slightly raised within them, thence deflected to the posterior margin; the disk posteriorly distinctly punctured, the keels strong and broad, but not deep. *Scutellum* on each side of the raised centre, brown. *Elytra; Clavus* with a pitchy-brown spot at the apex; *Corium;* anterior margin a little and gradually curved, between the nerves slightly punctate; apex pitchy-black; *Membrane* tinged with ochre-

ous, the anterior margin sometimes brown; the base of each nerve with a small, longish, piceous or black spot, which is sharply pointed on the side next the membrane; the 4th nerve curved near the base, (generally) joined to the 5th, and forming a cell in which is often a black spot which extends across the 4th nerve, and ends before the 3rd. In the spaces between the 2nd and 3rd, the 3rd and 4th, and the 4th and 5th are broad fuscous-brown streaks, of which the 1st scarcely reaches half-way up from the posterior margin, the 2nd is continued interruptedly to the base, and the 3rd is very short; all these streaks are wide on the posterior margin. In the ♀ all the streaks are very faint. *Sternum* in the ♂ brownish, in the ♀ ochreous. *Legs* concolorous with the antennæ; the club of the *thighs* very gradual not very thick, and only a shade darker than the rest of the limb; *tarsi;* 1st and 2nd joints ochreous, 3rd black.

Abdomen beneath slightly shining, finely punctured; in the ♂ brownish-ochreous, with a broad brown band down each side; in the ♀ ochreous. *Genital segments* in the ♂ globose, the lateral processes short, curved inwards; in the ♀ the processes are long, the points obtuse, distinctly separated, the sides perceptibly constricted.

Length, 2½ lines.

Widely distributed, but not common; in moss, West Wickham Wood, March; Sanderstead, May; Mickleham, April and August; Deal, May and August.

Species 2.—Berytus montivagus.

Berytus montivagus (*Bremi*), *Meyer Dür.* Stett. Ent. Zeit. ii, 88 (1841); *Fieb.* Wien. Ent. Monats. iii, 204, 2 (1859); Europ. Hem. 210, 2 (1861).

Ochreous. *Frontal process* from the side semi-oval. *Antennæ;* 1st joint, club abrupt, fuscous-brown, 3rd black at the apex, 4th entirely black. *Pronotum* deflected to the front, convex, the posterior ⅓ often clouded with dusky, sometimes defined into a spot. *Elytra; Clavus* and *Corium* brown at the apex; *Membrane* much broader than the corium, very broadly rounded posteriorly; nerves much bent at the base, the dark streaks between them very broad posteriorly. *Thighs* gradually clavate; club of the 1st and 2nd pairs dusky, of the 3rd pair fuscous brown or blackish, the apex pale.

Head brown-ochreous, very finely punctured; frontal process straight on the upper surface, rounded at the end, viewed sideways half-oval; the side processes strong, convex, widened a little at the end, above whitish. *Antennæ* reddish-ochreous; the club of the 1st joint stout, abrupt, entirely or only on the sides fuscous brown; 2nd at the apex fuscous brown; 3rd with the apex narrowly and suddenly black; 4th long fusiform, scarcely so thick as the club of the 1st, black. *Eyes* brown. *Underside* red-brown. *Rostrum* piceous.

Thorax.—Sides deeply punctured, ochreous, the margin next the sternum broadly black-brown; *pronotum* slightly deflected to the front, at the anterior angles slightly compressed, at the hinder angles a little and roundly widened, hindwardly on the posterior margin, narrower; posterior margin slightly concave; the disk transversely convex, in the centre (including the central keel) slightly depressed, within the hinder angles much and roundly raised, the anterior half finely, the posterior half strongly punctured, and with a large, dusky cloud. In some examples this cloud becomes a distinct spot, in others it is quite wanting. The keels are white. *Scutellum* dark ochreous, sometimes with a black margin, the centre strongly raised, pale ochreous. *Elytra* shining; *Clavus* ochreous, the apex brown; *Corium* ochreous, anterior margin slightly curved, with a dark shade near the apex, which has a long, piceous spot, and one or two dots above it, between the nerves; posterior margin with a very delicate brown line; *Membrane* diaphanous, much broader than the corium, the apex very broadly rounded; the nerves, especially the 4th, much bent at the base, the 4th united to the 5th, forming a cell at the base, but again diverging; on the base of each nerve a very small, light-brown dot; between the 2nd and 3rd, and 3rd and 4th nerves, a long, interrupted, brown streak, very broad at its exit on the posterior margin; at the base, within the curve between the 3rd and 4th nerves a large black-brown spot, and another longer spot between the 4th and 5th nerves, beyond the cell; the 4th and 5th nerves on the base brown. These markings vary in depth of colour, and are always paler in the ♀ than in the ♂. *Sternum* crenate-punctate, black or dark-brown, with fine, short whitish hairs. *Legs* ochreous; *thighs* long-clavate, the club in the first 2 pairs dusky ochreous on the sides, in the last pair fuscous brown (rarely blackish) with the apex paler; *tibiæ* with the extreme end brownish; *tarsi*; 1st joint yellow, 2nd and 3rd black, the second sometimes piceous.

Abdomen above black or fuscous. Underside finely punctate, ochreous-brown, with a pale line in the centre, and a dark brown one on each side, the central line and the margins of the segments smooth; the ♀ paler than the ♂. *Genital segments* beneath; in the ♂ the processes are not prolonged posteriorly, but are curved round; in the ♀ the processes form a triangular, convex point, in the least degree constricted before the rounded apex, which is almost imperceptibly notched.

Length, 3 lines.

Portmarnock (*Wollaston*); Sanderstead in moss, in March (*Douglas*); Folkestone, not rare, at roots of grass, in September (*Scott*); Charlton, under broom bushes; Coast of North Devon, in October (*Stainton*).

Species 3.—Berytus cognatus.

Berytus cognatus, *Fieb.* Wien. Ent. Monats. iii, 205, 4 (1859); Europ. Hem. 210, 4 (1861).

Ochreous. *Head*; frontal process seen from above linear, from the side semicircular; rostral channel nearly obsolete. *Antennæ*; club of 1st joint black. *Pronotum* much deflected to the front, convex, keels white, the middle one deepest. *Elytra* ending in an obtuse point; *Membrane* with 3 long, entire, black streaks between the middle nerves, the first 2 broad, the 3rd narrow. Club of the *thighs* gradual, black at the sides. Processes of the *genital segment*, in the ♂, short, parallel.

Head ochreous-brown; frontal process seen from above almost linear, convex, compressed at the point, with fine downy hairs; seen from the side semicircular, slightly separated from the face; side processes deflected, parallel, somewhat stouter towards the ocelli. *Antennæ* yellow; 1st joint, club rather abrupt, black; 2nd, with a slight brown ring at the extreme apex; 3rd, black at the apex; 4th, black, hairy. *Eyes* brown. *Ocelli* ochreous. *Rostrum* black; rostral channel scarcely perceptible.

Thorax.—Pronotum dull, much deflected from back to front; first 3rd ochreous-brown, nearly flat, finely punctured; the remainder pale ochreous, tinged with dusky, transversely very convex, and roundly deflected to the posterior margin, the punctures distinct,

large, round, shining; keels white, strong, rising in the same curve as the disk, the middle one deepest, the side ones merging into the slight callosity at the hinder angles; posterior margin slightly concave. *Scutellum* white. *Elytra* slightly shining, anterior margin slightly curved; *Clavus* mostly brownish between the nerves; *Corium*, nerves strong, lustrous; in the ♂ the space between the inner ones brownish; posterior margin outwardly with a fine brown line, apex black; *Membrane* broader than the corium, posteriorly obtuse-lanceolate, diaphanous, lustrous, with 3 long, black streaks; the 1st between the 2nd and 3rd nerves not quite reaching to the base, broad, widened posteriorly and sublanceolate; the 2nd between and as long as the 3rd and 4th nerves, broad, equal throughout; the 3rd between the 4th and 5th nerves, narrow, interrupted; in the ♀ these streaks are much fainter. *Sternum* brown, crenate punctate; *Mesosternum* piceous, disk quadrangular, nearly flat, with a deep middle channel, on the outer deflected sides a deep depression; *Metasternum* convex, the middle depressed. *Legs* yellow; *thighs;* club dusky, the sides with darker granulations; *tarsi;* 1st joint yellow, 2nd and 3rd black.

Abdomen beneath yellow-brown, with distinct, sharp, irregular punctures, and a smooth yellowish middle line. *Genital segment* in the ♂ callous, posteriorly abruptly deflected, the lateral processes short, parallel, the space between them quadrangular.

Length, 2¾—3 lines.

Dartford Brent, among thyme and moss, August.

Species 4.—BERYTUS CLAVIPES.

GERRIS CLAVIPES, *Fab.* E. S. iv, 192, 20 (1794); *Fall.* Mon. Cim. 118, 2 (1807).

BERYTUS — *Fab.* S. R. 265, 2 (1803); *Fall.* Hem. Suec. i, 165, 2 (1829); *Schill.* Beitr. i, 56, 2, t. 7, fig. 3 *b* (1829); *Hahn,* Wanz. i, 135, t. 21, fig. 69 (1831); *H. Schf.* Nom. Ent. i, 43 (1835); *Fieb.* Wien. Ent. Monats, iii, 205, 5 (1859); Europ. Hem. 211, 5 (1861).

— (NEIDES) CLAVIPES, *Flor,* Rhyn. Liv. i, 205, 2 (1860).

Dusky ochreous, shining. *Frontal process;* above straight, on the side subtriangular, rounded beneath. *Antennæ;* 1st joint, club slight, gradual, dusky only on the sides; 3rd yellow throughout. *Pronotum* flat; sides nearly parallel; posterior margin straight.

Elytra narrow; *Membrane* not wider than the corium, apex lanceolate. *Thighs* slightly, gradually clavate, the club not dark coloured.

Head ochreous-brown, with downy whitish hairs, the posterior ½ darker, finely punctured; *Frontal process* above long, straight, narrow, flat, with white hairs on the sides; seen from the side subtriangular, the underside rounded, the base not touching the face; side processes straight, parallel, deflected in front. *Antennæ* yellowish; 1st joint, the club slight, gradual, dusky on the sides; 3rd not darker at the apex; 4th black, finely haired, apex brownish. *Eyes* brown. *Ocelli* ochreous. Underside red-ochreous, finely, indistinctly punctured. *Rostrum* piceous, the base paler.

Thorax.—Sides strongly punctured; *Pronotum* brown-ochreous, depressed transversely in the middle, the anterior half finely, the posterior half strongly punctate; sides almost parallel, very slightly constricted in front; the keels strong, whitish, the side ones diminished in height at and behind the slightly raised hinder angles, the central one even throughout; hinder angles a little rounded, the posterior margin straight. *Scutellum* ochreous, the centre strongly raised. *Elytra* narrow, parallel; in the ♀ slightly curved on the anterior margin; *Clavus* and *Corium* ochreous or brown-ochreous; the nerves very strong, shining, the spaces between them on the *corium* deeply crenate-punctate, more slightly on the *clavus;* the nerves and intervals (especially in the ♂) narrowly streaked with brown, the apex of the *corium* piceous-black; membrane-suture brownish; *Membrane* dull, brownish, diaphanous, finely crenate, with 3 blackish streaks between the nerves, the 2nd very broad at the end, the 2nd nerve generally with a brown streak. At times the membrane is only partially developed. *Sternum* red-ochreous indistinctly punctured. *Legs* pale or brown-ochreous; *thighs* slightly and gradually clavate, the club not dusky; *tarsi;* 1st joint ochreous, the 2nd and 3rd black.

Abdomen above black; *Connexivum* ochreous. Underside shining, red-ochreous, with 2 pitchy-black streaks down each side and a pale line in the centre, distinctly granulose punctate, the edges of the segments smooth. *Genital segments* beneath; in the ♂ the lateral processes narrow, on the outside straight, the inside curved slightly outwards, the space between the two processes square, except that the very convex centre of the segment is posteriorly rounded and projects a little; in the ♀ the processes form a long point, the ends

obtuse, with a small notch between them, the outer sides very slightly concave.

Length, 3—3½ lines.

Rare; Darenth Wood, May 30th, under leaves; Folkestone, Sept. 1st, under *Ononis arvensis*.

Species 5.—BERYTUS CRASSIPES.

BERYTUS CRASSIPES, *H. Schf.* Nom. Ent. i 43 (1835); *Fieb.* Beitr. i, 351, 32, t. 2, fig. 28 (1836); *Costa*, Cent. 127, t. 3, fig. 5 (1852?); *Fieb.* Wien. Ent. Monats. iii, 206, 6 (1859); Europ. Hem. 211, 6 (1861).

Ochreous. *Frontal process;* above incrassated, from the side semicircular. *Antennæ;* 1st joint, club stout, abrupt, black; 2nd black on the upper ½; 3rd at the apex and 4th entirely black. *Elytra* together rhomboidal; *Corium* at the apex black; *Membrane* broader than the corium, posteriorly obtuse-lanceolate, at the base a large oval spot, and short, cuneiform, internervel lines on the posterior margin, black. *Legs* proportionally short and stout; *thighs* gradually clavate, the club black, piceous at the end.

Head brown-ochreous, very finely punctured; *Frontal process* short; above, incrassated, convex; viewed sideways semicircular, and joined to the face at the base; side processes strong, convex, whitish above, widened at the upper end and deflected; in a line with their base, but separate, the ocelli appear as two short, whitish nodules. *Antennæ* brown-ochreous, the club of the 1st joint abrupt, thick, black; the base of the 2nd ochreous, the rest black; the end of the 3rd black; 4th not so thick as the club of the 1st, black. *Eyes* dark-brown. Underside brown-ochreous, very finely punctured. *Rostrum* piceous.

Thorax.—Pronotum behind the middle depressed across the disk, including the side keels, but not the centre one, which is even throughout; hinder angles widened and rounded, the keels thereon shallower; the disk finely punctured, much and convexly raised within the hinder angles; posterior margin concave; all the keels white, with a very fine brown streak on the top. *Elytra* broad, together almost rhomboidal; *Clavus* and *Corium* ochreous, shining, somewhat finely punctate between the nerves; the apex of the *corium* black; *Membrane* posteriorly obtuse-lanceolate, ochreous, diaphanous;

on each nerve at its base a very minute light-brown dot; between the 3rd and 4th nerves, at the base, a large, oval, black-brown spot, and between the 2nd and 3rd, and 3rd and 4th nerves, on the posterior margin, a short, black-brown dash, broad outwardly and diminishing inwardly to a point; in the ♀ these dashes are scarcely perceptible. *Sternum* brown-ochreous, or dark brown finely punctured. *Legs* pale ochreous; *thighs* strong, gradually clavate, the club thick, black, the apex piceous; the 1st pair sometimes piceous only on the sides; *tarsi;* 1st and 2nd joints deep ochreous, 3rd black.

Abdomen above dusky; beneath strongly punctured; in the ♂ dark brown, with a central line and the sides pale; in the ♀ pale ochreous, with a paler central line. *Genital segments* beneath, in the ♂ the side processes short, curved inwards so that the intervening space appears round; in the ♀ the processes form a longish broad, obtuse point, with a notch just perceptible at the slightly narrower end; the outer sides almost imperceptibly constricted.

Length, 2—2½ lines.

Rare. On bare, sloping ground at Mickleham, in moss at the roots of *Teucrium scorodonium*, and in tufts of grass, and at Bexley Wood (*Scott*) in October.

Species 6.—BERYTUS MINOR.

BERYTUS MINOR, *H. Schf.* Nom. Ent. i, 43 (1835); *Panz.* F. G. 135, 7; *Fieb.* Wien. Ent. Monats. iii, 206, 7 (1859); Europ. Hem. 211, 7 (1861).

— (NEIDES) MINOR, *Flor*, Rhyn. Liv. i, 204, 1 (1860).

Ochreous. *Frontal process* above obtusely pointed, sideways semicircular. *Antennæ;* 1st joint, club rather gradual, stout, short, black; 2nd brownish towards the apex; 3rd black at the apex. *Pronotum* flat, depressed in the middle; side keels continued round the hinder angles, which are rounded and depressed; posterior margin nearly straight. *Thighs* gradually clavate, the club blackish-brown, generally on the sides only. *Genital segments*, in the ♂, the processes stout, obtuse, parallel.

Head ochreous-brown, finely punctured; *Frontal process* seen from above, narrow, slightly convex, obtusely pointed, and with fine white downy hairs; viewed sideways almost semicircular; the side processes

incrassated, much deflected, divergent before the eyes and well defined, but depressed behind them. *Antennæ* yellow, 1st joint black on the sides of the base, club rather gradual, thick, black; 2nd brown towards the apex; 3rd black at the apex; 4th black, shining, with fine projecting black hairs. *Eyes* brown. *Ocelli* ochreous. *Rostrum* piceous.

Thorax.—Sides strongly punctured: *Pronotum;* keels strong, whitish, sometimes with black streaks, side keels continued round the rounded, flat hinder angles; posterior margin nearly straight; disk horizontal, depressed transversely in the middle, on the anterior $\frac{1}{2}$ lightly, on the posterior $\frac{1}{2}$ strongly, closely punctured. *Scutellum* pale. *Elytra; Clavus* and *Corium* shining, the nerves lustrous; *Corium,* anterior margin slightly rounded, posterior margin with a fine brown line; *Membrane* dull, diaphanous, finely crenate; anterior margin and the 2nd nerve brown; between the 2nd and 3rd nerves a strong, gradually widening black dash from the middle to the apex, and a similar but longer and narrower one between the 3rd and 4th nerves on the basal $\frac{1}{2}$; apex black; these dashes are often obsolete in the ♀. *Legs* yellow; *thighs* gradually clavate, the club entirely or only at the sides blackish-brown; *tarsi;* 1st joint yellow, 2nd and 3rd black.

Abdomen beneath, in the ♂ brown, punctured, the middle with a lighter, the sides with a darker line; in the ♀ altogether paler. *Genital segments;* in the ♂, the processes broad, the points obtuse, distant, not converging, the space between the processes quadrangular; in the ♀ the 2nd segment elongate, slightly constricted in the middle.

Length $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

Not rare in moss, and at the roots of grass in dry places, in spring, autumn, and winter; Deal, Charlton, Sanderstead, N. Devon (*Stainton*), Isle of Man (*Stowell*).

Species 7.—BERYTUS COMMUTATUS.

BERYTUS COMMUTATUS, *Fieb.* in litt.

Ochreous. *Frontal process* seen from above, with a fine thin point, sideways, almost semi-oval. *Antennæ;* 1st joint, club short, abrupt, black; 3rd black at the apex; 4th black. *Pronotum* nearly flat, depressed in the middle; side keels somewhat flat-

tened at the hinder angles, which are slightly raised; posterior margin angularly concave. *Thighs* gradually clavate, the club fuscous brown at the sides, and with brown punctures in rows. *Genital segment* in the ♂, the processes broad, the points obtuse, slightly converging.

Head ochreous-brown, with very fine whitish hairs, finely punctured; *Frontal process* seen from above narrow, slightly convex, going to a long, thin point; viewed sideways almost semi-oval; side processes wide, convex, not much deflected, nearly parallel before the eyes, slightly defined behind them. *Antennæ;* 1st joint pale ochreous, slightly blackish on the sides of the base, the club short, abrupt, black; 2nd and 3rd brown-ochreous, the apex of the latter black; 4th black, shining, with fine projecting black hairs. *Eyes* brown. *Ocelli* ochreous. Underside brown-ochreous, finely crenate punctate. *Rostrum* piceous.

Thorax.—Sides strongly punctured; *Pronotum* ochreous, nearly flat, depressed in the middle (except the keels), the sides very slightly, almost imperceptibly, constricted in front; keels strong, whitish, the side ones somewhat flattened at the hinder angles, which are slightly raised; posterior margin angularly concave; disk posteriorly slightly deflected to the posterior margin; the first 3rd with fine, the remainder with stronger, subconfluent punctures. *Scutellum* whitish. *Elytra; Clavus* and *Corium* shining, the nerves lustrous; *Corium;* anterior margin slightly curved; posterior margin narrowly light brown; apex finely brown margined; *Membrane* somewhat dull, diaphanous; in the ♂ the spaces between the 2nd and 3rd, and the 3rd and 4th nerves, with a strong, black-brown line, the inner one extending from the base almost to the posterior margin, and of uniform breadth throughout, the outer one not reaching the base, and very broad posteriorly; in the ♀ these dark lines are mostly wanting. *Sternum* brown-ochreous, finely crenate-punctate. *Legs; Coxæ* shaded with piceous; *thighs* pale ochreous, gradually clavate, the club fuscous-brown at the sides, and with very fine brown granulations and punctures in rows; *tibiæ* very thin, ochreous, or yellowish, unicolorous throughout; *tarsi;* 1st joint yellow, 2nd piceous or black, 3rd black.

Abdomen above fuscous-black; beneath strongly, distinctly punctured, ochreous in the ♀, darker and with a black-brown line on each side in the ♂; *Connexivum* ochreous. *Genital segments* in ♂ raised, convex, posteriorly deflected abruptly; the side processes

broad, their ends obtuse, distant but slightly converging, the space between the processes broadest and rounded at the base; in the ♀ the sides of the 2nd segment are almost straight.

Length, $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

Extremely like *B. minor*, and perhaps not truly distinct, as a long series of examples shows apparent approximation of structure.

Not rare where it occurs. Eltham, Mickleham, and Plumstead Common, in moss and at the roots of grass, &c., in spring, autumn, and winter.

Genus 2.—Neides, *Latr.*, *Fieb.*

Long, linear.

Head.—Crown horizontal, very long, quadrangular, constricted at the sides about the middle, and with a slight incision across the disk at the same place; immediately behind this transverse cut (just before the *ocelli*) two, very slight projections, between which begins a process, gradually rising and widening, and then narrowed to an obtuse point, which projects far over the face; from the end the process curves gradually downward towards the face, but does not touch it; the upper side is flat, or slightly furrowed down the centre, and the lower side is narrow. The antenniferous processes very short, obtuse, and not widened laterally. *Face* long, narrow, deflected; the central lobe long, curved, obtusely pointed, the space between it and the frontal process distinct, triangular; the side lobes very small, the cheeks large. *Antennæ* as long as the body, filiform; 1st joint very long, at the upper end short-clavate; 2nd not $\frac{1}{2}$ so long as the 1st; 3rd. $\frac{4}{5}$ths as long as the 1st; 4th not so long as the 2nd, thickened, fusiform, the base slender, smaller than the end of the 3rd. *Eyes* large, round, flattened. *Ocelli* small, inserted behind the transverse cut on the crown. *Rostrum* reaching the 2nd pair of coxæ; 1st joint broad, 2nd narrow, in length subequal, the 2 together as long as the head; 3rd rather shorter, 4th longer than the 2nd; rostral channel the length of the head, wide, shallow, in front with very shortly produced sides.

Thorax.—Sides vertical; *Pronotum* very long, quadrangular and flat, or long-trapeziform and convex; anterior margin concave, anterior angles scarcely produced; side margins well defined, a very little constricted close behind the anterior angles, posterior margin on the sides of the thorax very oblique, above concave in the middle,

the ends much rounded; disk posteriorly deflected, within the hinder angles more or less raised, across the middle depressed, the centre with a longitudinal keel, which ceases on the anterior 3rd. *Scutellum* partly covered by the base of the pronotum, the portion visible small, thick, pointed. *Elytra* longer than the abdomen, narrow, the sides parallel; *Corium* long, going from the end of the clavus to a fine point; posterior margin straight; nerves strong, the interstices filled with cellular punctures; *Membrane* lanceolate, the apex obtuse; nerves 5, simple. *Sternum*; rostral channel reaching to the end of the *metasternum*, deep, narrow, wider on the *mesosternum*. *Legs* very long, filiform; *coxæ* large, 3rd pair distant; *thighs* at the top long-clavate; *tibiæ* suddenly bent and thickened at the top; *tarsi* long, 1st joint as long as the 2nd and 3rd together.

Abdomen above flat, beneath convex; the posterior margin of the last segment straight, closely united to the 1st genital segment; *Connexivum* broad, flexible. *Genital segments*, in ♂, rounded, without lateral processes; beneath, the 1st segment is rounded, convex, cap-like, covering the other 2 segments, which are barely visible at the sides; in ♀, beneath, the 1st segment is obtusely pointed, compressed at the sides, and with a slight ridge in the centre; it overlies the 2nd segment in its centre, and reaches on to the base of the long, subquadrangular 3rd segment, which has a slit down the centre; the points of the 2nd segment at the sides alone are visible.

Species 1.—NEIDES DEPRESSUS.

NEIDES DEPRESSUS, *Fieb.* in litt.

Pale ochreous; *pronotum* quadrangular, not convex.

Head finely punctured, at the sides tinged with fuscous or dark ochreous, and with fine wavy, whitish hairs; frontal process at the end obtuse. *Antennæ* yellowish; 1st joint fuscous at the base, the club with black punctures in rows, forming a line at the sides; 4th black, delicately haired. *Eyes* dark brown. *Ocelli* ochreous. *Rostrum* yellow at the base and on the inner side, the rest pitchy-black.

Thorax.—Pronotum; disk with subconfluent rounded punctures, larger towards the base, on the 1st third scarcely perceptible; side

margins and central keel whitish. *Scutellum* pale ochreous. *Elytra* shining, diaphanous; *Clavus* and *Corium* with deep, transverse, cellular punctures between the nerves; apex black, posterior margin with 4 or 5 black or brown spots, sometimes very indistinct; *Membrane* finely crenate; the apex of the 2nd nerve black-brown; the space between the 2nd and 3rd nerves with several black-brown granular dots in a row; the 3rd and 4th nerves black-brown. *Sternum* black, with fine appressed white hairs, forming a line on the margins of the rostral channel, and another exterior to it. *Legs* yellow; *thighs* with the club black granulose-punctate in rows; *tibiæ* black at the apex; *tarsi* black.

Abdomen above, at the base and centre, black; *Connexivum* ochreous, with a brown line at the base. Underside finely granulose-punctate, dark brown, lighter in the centre, with 3 indistinct lines, and the margin of the segments with whitish spots; sides darker.

Length, $4\frac{1}{2}$ lines.

Local. Deal, under *Erodium cicutarium;* Folkestone, under *Ononis;* in August and September.

Species 2.—NEIDES TIPULARIUS.

CIMEX TIPULARIUS, *Lin.* F. S. 973 (1761); S. N. i, 733, 120 (1767); *Schrk.* F. B. ii, 98, 1168 (1801).

GERRIS — *Fab.* E. S. iv, 192, 18 (1794); *Fall.* Mon. Cim. 118, 7 (1807).

BERYTUS — *Fab.* S. R. 264, 1 (1803); *Wolff,* Ic. Cim. 204, t. 20, fig. 198 (1811); *Fall.* Hem. Suec. 165, 1 (1829); *Schill.* Beitr. 56, 1, t. 7, fig. 3 *a* (1829); *Hahn,* Wanz. i, 133, t. 21, fig. 68 (1831); *Burm.* Handb. ii, 313, 1 (1835).

NEIDES — *Lat.* Gen. iii, 120, 1 (1807); *Oliv.* Enc. viii, 163, 1, pl. 374, fig. 1 (1811); *Spin.* Hém. 204, 1 (1837); *Am. et Serv.* Hém. 233, 1 (1843); *Fieb.* Wien. Ent. Monats. iii, 203, 3 (1859); Europ. Hem. 209, 3 (1861).

BERYTUS (SPHALEROCORIS) TIPULARIUS, *Flor,* Rhyn. Liv. i, 206. 3 (1860).

Ochreous; pronotum long-trapezoidal, convex.

Head above ochreous-brown, finely punctured; the sides dark brown, with whitish wavy hairs; beneath black. *Antennæ* with

extremely fine hairs, yellowish; 1st joint with a short dark line outwardly at the base, the club with a black line on each side; 4th black, the apex brown. *Eyes* brown. *Ocelli* ochreous.

Thorax.—Pronotum long-trapezoidal; 1st third depressed, ochreous-brown, minutely punctured; anterior margin in the middle, with a small, raised yellowish spot; hinder $\frac{2}{3}$rds convex, with a round callosity within the hinder angles; disk and vertical sides with distinct, round, brown punctures; the middle keel and incrassated side margins pale yellowish, the former strong, but shallower posteriorly on the deflected portion of the disk. *Elytra* with large, deep, transverse, unicolorous, cellular punctures between the strong nerves; posterior margin with 3—6 black spots, one of them at the apex; *Membrane* finely crenate, with a row of brown spots between the 2nd and 3rd nerves, towards the apex. *Sternum;* sides ochreous, middle black, the sides of the rostral channel with fine pile. *Legs* yellow, with extremely fine hairs; *coxæ* outwardly ochreous, inwardly black; *thighs;* the club with black punctures in rows on the sides, beneath brown; *tibiæ* black towards the apex; *tarsi* black, 1st joint somewhat ochreous.

Abdomen dark brown, beneath shining, with granulated black punctures.

Length, $4\frac{1}{2}$ lines.

Rare. Locality not recorded.

Section 4.—*CŒCIGENINA.**

Family 1.—PYRRHOCORIDÆ.

Genus 1.—Pyrrhocoris, *Fall.*

Oval.

Head wide, longer than broad, 5-sided; *Crown* short, flat; *Face* triangular, convex; central lobe long, prominent; side lobes much shorter, deflected outwards; antenniferous processes stout, short, directed outwards. *Antennæ* strong, rather long; 1st joint clavate, curved outwards, the base thin, more than $\frac{1}{2}$ the length reaching beyond the end of the face; 2nd and 3rd a little thickened at the

* Page 19.

apex, the 2nd rather longer than the 1st, the 3rd about $\frac{1}{2}$ the length of the 2nd; the 4th larger than the 3rd, but not so long as the 1st, of the same thickness throughout, the apex excepted. *Eyes* moderate, prominent, but not projecting laterally beyond the anterior margin of the pronotum. *Rostrum* reaching to the hinder coxæ, the 1st 3 joints in length subequal, the 1st as long as the head, the 4th shortest.

Thorax.—Pronotum trapezoidal; the anterior margin slightly concave, greatly incrassated, widest in the middle; lateral margins reflexed; posterior margin straight, hinder angles subacute; disk flat, or with a broad transverse elevation on the first half, not extending to the sides. *Scutellum* large, triangular; basal angles depressed, sides slightly concave, apex acute. *Elytra* flat; *Clavus* on the same plane as the *Corium; Corium*, anterior margin gradually rounded, vertically reflexed, more strongly on the 1st half; the nerves obsolete; *Membrane* (in all British examples) rudimentary; when developed it has (according to Herrich-Schäffer, 'Wanz.' ix, 173) "2 somewhat regular cells in the middle of the base, from which 8 irregular forked nerves spring." *Sternum* without rostral channel, *Mesosternum* with a central keel. *Legs* strong; *thighs* small at the base, gradually thicker upwards, but constricted slightly at the apex, the 1st pair thickest, the 2nd pair thinnest, beneath minutely dentate, more strongly on the 1st pair; *tarsi;* on the 1st and 2nd pairs of legs the 1st joint as long as the other 2; on the 3rd pair it is much longer.

Abdomen above flat; *Connexivum* broad, almost vertical. Underside very convex; in both sexes the posterior margin of all the segments, except the 6th, sinuate; on the 6th straight. *Genital segments* as stated under the head of the Family at p. 20.

Species 1.—PYRRHOCORIS APTERUS.

CIMEX APTERUS, *Lin.* S. N. 727, 78 (1767); *De G.* Mém. 181, 20 (1773).

LYGÆUS — *Fab.* S. R. 227, 16 (1803); *Wolff,* Ic. Cim., 108, t. 11, fig. 102 (1811).

PLATYNOTUS APTERUS, *Schill.* Beitr. 57 (1829); *Hahn,* Wanz. i, 19, t. 3, fig. 11 (1831); *Kolen.* Mel. Ent. ii, 69, 32 (1845).

PYRRHOCORIS CALMARIENSIS, *Fall.* Hem. Suec. 45, 1 (1829).

PYRRHOCORIS APTERUS, *Curt.* B. E. x, fig. 465 (1833); *Burm.* Handb. ii, 286, 12 (1835); *Am. et Serv.* Hém. 269, 1 (1843); *Flor,* Rhyn. Liv. i, 212, 1 (1860); *Fieb.* Europ. Hem. 163, 3 (1861).

Black and scarlet, dull or slightly shining.

Head black, finely crenate-punctate. *Antennæ* black. *Eyes* black, or with a brown ring round the base. *Rostrum* black.

Thorax.—Pronotum; on the 1st ½ a broad, transverse, quadrangular, convex, smooth, black spot, deeply punctured in front; joined to this posteriorly two, broad, quadrate, deeply and rather widely punctured black spots, divided from each other by a fine red line; all the rest of the pronotum scarlet, with strong, distant punctures, *Scutellum* black, very finely crenate-punctate. *Elytra; Clavus* black with strong irregular punctures; *Corium* with fine distant punctures, scarlet; near the base and clavus a small oval spot, and beyond the middle a large round spot, black; *Membrane* (according to Fieber) smoke-brown, the nerves deep brown. *Sternum* black, the margins of each segment and a large spot at the base of the coxæ scarlet. *Legs* black; *tibiæ* and *tarsi* finely haired.

Abdomen above black, the base and the posterior margin of the 6th segment more or less red. *Connexivum* above and beneath scarlet. Underside black, smooth; the posterior margin of the 6th segment broadly scarlet. *Genital segments* black; in the ♂ the 2nd segment red.

Length, ♂ 3—3½, ♀ 4—4½ lines.

Local. Torquay and Teignmouth, Devon; Beccles, Suffolk (*Curtis*).

SECTION 5.—*LYGÆINA.**

FAMILY 1.—RHYPAROCHROMIDÆ.

Genus 1.—GASTRODES, *Westw.*

(Introd. Mod. Classif. ii, Synops. 122 (1840.)

Oval, flat.

Head convex, long, 5-sided; *Crown* quadrangular; antenniferous processes short, deflected; *Face* long, triangular; central lobe long,

* Page 20.

prominent, the end obtuse; sides lobes convex, shorter than the central lobe. *Antennæ* rather strong, long; the first 3 joints gradually wider from the base to the apex; 1st not so long as the head, but projecting beyond it; 2nd twice as long as the 1st; 3rd and 4th petiolated, in length subequal, each not quite so long as the 2nd; 4th long-fusiform. *Eyes* prominent, inserted at some distance from the base of the head. *Ocelli* prominent, more distant from each other than from the eyes. *Rostrum* reaching to the 2nd pair of coxæ, thin, the base in a much wider oval channel, ½ the length of the head, the sides of the channel raised and rounded in front; 1st joint not so long as the head; 2nd 1½ times as long as the 1st, reaching to the 1st pair of coxæ.

Thorax.—Pronotum trapezoidal, in front narrowed almost to the width of the base of the head; anterior margin concave, slightly raised; anterior angles deflected, rounded; sides (within the margin) slightly curved inwards at ⅔rds of the length, then suddenly widened in a slighter curve to the hinder angles; the angle formed between the two curves filled with a thin horizontal plate, being an extension inwards of the margin; disk, at about ⅔rds of its length, with a slight transverse depression, ending in a deep foveæ on each side, but within the margin; at the hinder angles a large oval callus; hinder angles rounded; posterior margin concave. *Scutellum* large, triangular; the centre depressed. *Elytra; Clavus* deflected to the *Corium;* claval suture depressed; *Corium;* anterior margin gently rounded, slightly reflexed, broad for about the first 3rd, then suddenly narrow; the 2nd nerve greatly incrassated and raised for about ½ its length; *Membrane* transversely depressed on the outer half near the base, with 4 nerves arising at the base; the 1st curved to the anterior margin, the other 3 equidistant, curved beyond the base, and then straight to the posterior margin. *Sternum; Mesosternum* in the centre swollen, with a deep, hindwardly widened rostral channel; *Metasternum* in the centre depressed; the xyphus on both segments long and pointed. *Legs* strong; *thighs* fusiform, 1st pair very thick, more or less flattened beneath and dentate; *tibiæ* angulated, gradually thicker to the apex; 1st pair widely bent outwards at the base, at the apex somewhat suddenly widened on the inner side and channeled; *tarsi;* 1st joint of the 1st and 2nd pairs as long as the other 2, of the 3rd pair longer.

Abdomen above flat, beneath convex; *Connexivum* broad, greatly reflexed. Underside; in the ♀ the 5th segment is but slightly

shortened in the centre. *Genital segments;* the 3rd is very wide and bilobed, the middle channel being deep and keeled.

Species 1.—Gastrodes Abietis.

Cimex Abietis, *Lin.* F. S. 257, 969 (1761); S. N. ii, 732, 115 (1767); *Panz.* F. G. 92, 22.
? — grossipes, *De G.* Mém. iii, 308, 37, t. 15, figs. 20, 21 (1773).
Miris Abietis, *Fab.* E. S. iv, 187, 15 (1794); S. R. 256, 16 (1803).
Lygæus — *Fall.* Hem. Suec. 61, 21 β (1829).
Platygaster Abietis, *Schill.* Beitr. 83, 2 (1829); *H. Schf.* Nom. Ent. i, 45 (1835); *Kolen.* Mel. Ent. ii, 86, 57 (1845).
Pachymerus (Ancylopus) Abietis, *Flor,* Rhyn. Liv. i, 233, 4 (1860).
Homalodema Abietis, *Fieb.* Europ. Hem. 187, 1 (1861); *Stål,* Vet. Akad. Förh. 219, 1 (1862).

Antennæ black, 1st joint and lower part of 2nd red-brown, the end of the 1st scarcely projecting beyond the end of the face; the side margins of the *pronotum* reflexed throughout; *corium* with a large pale spot.

Head black, finely punctured. *Antennæ* black, 1st joint and the lower half of the 2nd red-brown; the end of the 1st scarcely projecting beyond the end of the face. *Eyes, Ocelli,* and *Rostrum,* piceous.

Thorax.—Pronotum; first ⅔rds black, smooth, with a row of punctures just within the anterior and lateral margins; the last 3rd ochreous-brown, with fine brown punctures; lateral margins yellow, with a brown edge, reflexed, at first narrow, gradually widening as far as the black colour extends, then again narrow. *Scutellum* black, the central depression large, finely punctured. *Elytra; Clavus* gray-brown, with 4 rows of punctures, the inner one black; *Corium* ochreous-brown or cinnamon-brown, with a large, undefined, pale spot within the posterior inner angle; *Membrane* fuscous-brown, the basal inner angle and the base a little before it white. *Sternum* finely punctured, the central swelling smooth; the sides of all the segments and the posterior margin of the *Pro-* and *Metasternum* ochreous-red. *Legs* light red-brown; in the ♀ the *thighs* beneath, on the first ⅔rds flat, on the outer edge, to beyond the middle, with

several small black teeth, and a large red one at the end of the row; the rest of the flat portion smooth; the remaining 3rd is suddenly contracted on the fore side to an edge, which extends to the apex, and is set with several black teeth, of which the first is much the largest; more beneath is a second row of very small teeth. (In the ♂, according to Flor, the fore thighs are perceptibly thinner, not contracted beyond the middle, and with only one strong tooth in the denticulation.) *Tarsi* hairy beneath; the last ⅓ of the 3rd joint piceous.

Abdomen beneath ochreous-red, very finely punctured.

Length, 3½ lines.

On spruce firs (*Pinus Abies*). Woolmer (*Wollaston*).

Species 2.—GASTRODES FERRUGINEUS.

CIMEX FERRUGINEUS, *Lin.* S. N. ii, 730, 99 (1767).
LYGÆUS ABIETIS, *Fall.* Hem. Suec. 61, 21 (1829); *Zett.* Ins. Lap. 264, 13 (1840).
PLATYGASTER FERRUGINEUS, *Schill.* Beitr. 82, 1, t. 7, fig. 7 (1829); *Hahn*, Wanz. iii, 34, t. 84, fig. 254 (1835); *H. Schf.* Nom. Ent. i, 45 (1835); *Kolen.* Mel. Ent. ii, 85, 55 (1845).
RHYPAROCHROMUS — *Sahlb.* Geoc. Fen. 64, 17 (1845).
PACHYMERUS (ANCYLOPUS) FERRUGINEUS, *Flor*, Rhyn Liv. 235, 5 (1860).
HOMALODEMA FERRUGINEUS, *Fieb.* Europ. Hem. 187, 2 (1861); *Stål*, Vet. Akad. Förh. 219, 2 (1862).

Antennæ brown-red, 1st joint reaching by about ½ its length beyond the end of the face; *pronotum*, side margins reflexed posteriorly only; *corium* without a pale spot.

Head black, finely punctured. *Antennæ* red-brown; the 1st, 3rd, and 4th joints often more or less piceous, half the length of the first, projecting beyond the end of the face. *Eyes* and *Ocelli* black. *Rostrum* piceous.

Thorax.—Pronotum finely punctured; first ⅔rds black, the side margins turned down and under; last 3rd ochreous-brown or cinnamon-

brown, the side margins narrowly reflexed. *Scutellum* black, finely punctured. *Elytra; Clavus* and *Corium* finely punctured in rows, cinnamon- or rust-brown, dull; *Corium* on the inner side generally of a darker shade; the broad anterior margin clear, unpunctured; *Membrane* light brown; nerves concolorous; the inner margin fuscous; inner basal angle ochreous. *Legs* brown-red; *thighs;* 1st pair beneath somewhat flattened, almost channeled; the anterior edge with a row of small teeth, and one large one beyond the middle; *tibiæ* with fine, distant hairs; *tarsi* hairy beneath, the last ½ of the 3rd joint piceous.

Abdomen above, shining pitchy-black, the centre and sides light brown; *Connexivum* pitchy-black, hindwardly more or less cinnamon-brown. Underside shining, pitchy-black, finely punctured.

Length, 3½ lines.

Common in autumn and spring, on Scotch fir (*Pinus sylvestris*), and larch (*P. larix*), and in winter under the bark.

Genus 2.—PLOCIOMERUS, *Say.*

(Amer. Ent. 18.)

Long-oval.

Head long, convex, 5-sided, a little narrowed behind the eyes; antenniferous processes short and stout, produced before and below the eyes; *Face* long, triangular; central lobe long, convex, the end obtuse; side lobes much shorter than the central one, the end acute. *Antennæ* long, slender; 1st and 4th joints thicker than the 2nd and 3rd; 1st not so long as the head, but ½ its length projects beyond the end of the face; 2nd and 3rd a little thickened at the apex; 2nd not quite double the length of the 1st; 3rd shorter than the 2nd; 4th as long as the 2nd, long-fusiform. *Eyes* large, round, prominent, but somewhat flattened. *Ocelli* large, rather more distant from each other than from the eyes. *Rostrum* reaching almost to the 2nd pair of coxæ.

Thorax.—Pronotum as long as its greatest breadth, greatly constricted in the middle, where there is a deep, narrow, transverse depression, as it were dividing the disk into 2 parts. The fore portion much narrower than the hinder, very convex; sides immarginate, rounded; anterior margin with a distinct collar, wider at the

centre than at the sides. The hinder portion not so convex as the front; rapidly widening posteriorly, with a slight curve to the hinder angles, which are prominent, but rounded; posterior margin rather longer than the breadth of the base of the elytra, slightly concave. *Scutellum* large, triangular; the base deflected, centre depressed; hinder portion with a central ridge. *Elytra; Clavus* slightly deflected to the *Corium; Corium* flat, slightly deflected outwards; anterior margin narrowly reflexed, nearly straight; posterior margin straight; *Membrane* with 4 nerves arising at the base; the 1st strongly curved outwards, and ending on the anterior margin; the 2nd less curved; the 3rd at first strongly curved inwards and raised, then straight; the 4th at first curved, parallel to the 3rd, but beyond the middle divergent and sinuate; all the last 3 extend to the posterior margin. *Sternum: Mesosternum;* xyphus very short. *Legs: thighs;* 1st pair very thick; beneath, beyond the middle, with two short spines, another nearer the apex, and some other much smaller ones adjacent; 2nd and 3rd pairs not so strong as the 1st, and not thickened in the middle, the apex slightly constricted; *tibiæ* a little thickened at the apex; *tarsi* very long; 1st joint longer than the 2nd and 3rd, the 2nd very short.

Abdomen oval, above flat, beneath rather convex; *Connexivum* moderate, much reflexed.

Species 1.—Plociomerus fracticollis.

Pachymerus fracticollis, *Schill.* Beitr. i, 82, 27, t. 7, fig. 6 (1829); *Hahn*, Wanz. i, 66, t. 10, fig. 40 (1831); *H. Schf.* Nom. Ent. i, 44 (1835).
Plociomerus — *Sahlb.* Geoc. Fen. 70, 1 (1845).
Pachymerus insectus, *Bohem.* Vet. Akad. Handl. 250 (1849).
— (Plociomerus) fracticollis, *Flor*, Rhyn. Liv. i, 229, 2 (1860).
Plociomerus fracticollis, *Fieb.* Europ. Hem. 172, 3 (1861).
Plociomera — *Stål*, Vet. Akad. Förh. 214, 2 (1862).

Black, finely haired.

Head black, finely punctured. *Antennæ;* 1st and 4th joints piceous; 2nd and 3rd reddish-brown; apex piceous. *Eyes* black. *Ocelli* reddish. *Rostrum* piceous.

Thorax.—Pronotum ; fore half dull black, except the collar on the anterior margin, which is reddish-brown; hinder half ochreous, more or less suffused with piceous spots; sides and hinder angles broadly clear and unpunctured; disk lightly punctured and with distant, very short, yellowish hairs. *Scutellum* black, the sides punctured, the apex ochreous; a spot on each side of the base of the central ridge reddish; *Elytra, Clavus,* and *Corium,* ochreous, with brown shades and fine, short, yellow hairs, and several lines of contiguous, piceous punctures, between which, inwardly, is a long clear spot of the ground colour, broadest on the posterior margin, and another undefined spot, outwardly, near the apex; the anterior margin is also clear, with a brown line on its edge; *Membrane* light-fuscous-brown; the nerves, the base to beyond the 2nd nerve, a large spot on the anterior margin, and another on the posterior margin outside the 2nd nerve, whitish. *Sternum* black, with a whitish gloss, punctured; posterior margin of the *Metasternum* reddish-brown. *Legs* reddish-brown; *hinder thighs* with an indistinct dark ring towards the apex; *tarsi;* last joint piceous at the extremity.

Abdomen.—Connexivum reddish. Underside black, finely punctured, and with fine, short, yellow hairs.

Length, $2\frac{1}{2}$—3 lines.

Rare. In the collection of Mr. Dale, and once taken by Mr. G. Crotch in the Cambridge Fens.

Genus 3.—CALYPTONOTUS.*

(RHYPAROCHROMUS, *Fieb.*)†

Long, thick, flat above, elliptic; sides nearly parallel.

Head broad, very convex; *Face* triangular; central lobe sharply defined, broadest at the apex; side lobes pointed in front, not so long as the central lobe. *Antennæ* long, stout; 1st joint subclavate, one half its length reaching beyond the end of the face; 2nd and 3rd

* Καλυπτῶ, to cover as a shield, and νῶτος, the back.

† Curtis ('B. E.' p. 612) expressly says that *Lygæus Chiragra,* Fab., is the type of his genus *Rhyparochromus,* consequently his generic name must be retained for that section of the original genus which contains the species, *i. e. Megalonotus,* Fieb.

scarcely thickened at the apex; 2nd at least twice as long as the 1st; the 3rd not so long as the second; 4th cylindrical, pointed at the ends, as long or longer than the 3rd. *Eyes* large, semiglobose. *Ocelli* small, distant. *Rostrum* reaching across the mesosternum.

Thorax.—Pronotum trapeziform, broader in front than the head across the eyes; anterior margin nearly straight; sides nearly straight; lateral margins wide and flat; posterior margin concave, the ends somewhat produced over the clavus; hinder angles rounded; disk, 1st ⅔rds convex, the last 3rd flat, with a long callus within the hinder angles. *Scutellum* large, triangular, more or less convex. *Elytra* as long as the abdomen; *Clavus* and *Corium* nearly horizontal; *Corium;* anterior margin nearly straight, posteriorly rounded, the base widened and reflexed; 1st nerve strong and raised, especially at the base; *Membrane;* anterior margin rounded; disk with 5 nerves; the 1st very short, the 2nd curved to the anterior margin; the 3rd nearly straight, ending at the apex; the 4th and 5th arising close together near the inner basal angle, curved inwardly and outwardly, and then going straight to the posterior margin, parallel to each other throughout. *Sternum; Mesosternum* in front with a sharp keel, hindwardly slightly convex; *Metasternum* somewhat rhomboidal, with a slight central keel. *Legs: thighs;* 1st pair incrassated, fusiform, beneath flat, with 1 large and sometimes 2 other smaller teeth; *tibiæ* with long, distant, spinose hairs; 1st pair sometimes bent, always widened inwardly at the apex, with a deep channel on the side and a spine beneath; *tarsi* long; 1st joint larger than the other 2, on the 3rd pair twice as long.

Species 1.—Calyptonotus Rolandri.

Cimex Rolandri, *Lin.* F. S. 957 (1761); S. N. (ed. 12), i, 729, 98 (1767).
— bimaculatus, *Lin.* S. N. (ed. 10), i, 449, 76 (1758).
— fulvomaculatus, *De G.* Mém. iii, 294, 33 (1773).
Lygæus Rolandri, *Fab.* E. S. iv, 164, 99 (1794); S. N. 230, 127 (1803); *Wolff,* Ic. Cim. 199, t. 19, fig. 193 (1811); *Fall.* Hem. Succ. 60, 20 (1829).
Pachymerus Rolandri, *Panz.* F. G. 118, 3; *Schill.* Beitr. 72, 12 (1829); *H. Schf.* Nom. Ent. i, 44 (1835); *Kolen.* Mel. Ent. ii, 79, 45 (1845).

RHYPAROCHROMUS ROLANDRI, *Am. et Serv.* Hém. 253, 1 (1843); *Fieb.* Europ. Hem. 194, 2 (1861); *Stål*, Vet. Akad. Förh. 220, 1 (1862).

Black, dull.

Head, *Pronotum*, *Scutellum*, *Clavus*, and *Corium*, with minute punctures; *Membrane* with a large, rhomboidal, orange spot at the inner basal angle. *Abdomen* beneath with yellowish pubescence.

Length, 3—3½ lines.

Scarce. Under refuse in a pea-field, near Darenth, in the autumn; also in the spring, flying.

Species 2.—CALYPTONOTUS PINI.

CIMEX PINI, *Lin.* F. S. 255, 956 (1761); S. N. i, 729, 96 (1767) *De G.* Mém. iii, 279, 22, pl. 14, fig. 22 (1773); *Rossi*, F. E. 1328 (1790).

LYGÆUS — *Fab.* E. S., iv, 163, 97 (1794); S. R. 229, 125 (1803); *Wolff*, Ic. Cim. 74, t. 8, fig. 71 (1801); *Fall.* Mon. Cim. 64, 5 (1807); Hem. Suec. 51, 6 (1829); *Zett.* F. Ins. Lap. i, 470, 5 (1832); Ins. Lap. 263, 6 (1840).

PACHYMERUS PINI, *Schill.* Beitr. i, 64, 1, t. 5, fig. 3 (1829); *Hahn*, Wanz. i, 38, t. 7, fig. 25 (1831); *Burm.* Handb. ii, 296, 9 (1835); *H. Schf.* Nom. Ent. i, 44, (1835).

RHYPAROCHROMUS PINI, *Am. et Serv.* Hém. 254, 2 (1843); *Sahlb.* Geoc. Fen. 55, 1 (1848); *Fieb.* Europ. Hem. 195, 8 (1861); *Stål*, Vet. Acad. Förh. 221, 2 (1862).

PACHYMERUS (PACHYMERUS) PINI, *Flor*, Rhyn. Liv. i, 269, 23 (1860).

Black, dull; *corium* dark ochreous, posteriorly with a large, black, rhomboidal spot; anterior *tibiæ* red on the basal half.

Head finely punctured, with fine yellowish appressed pubescence and 2 long erect hairs on the front of the crown. *Antennæ* black, with fine yellowish pubescence, on the 1st joint a few strong black projecting hairs, the extreme base of all the joints narrowly red. *Eyes*, *Ocelli*, and *Rostrum* black.

Thorax.—Pronotum; anterior margin sometimes ochreous in the middle; anterior angles squarely rounded; lateral margins narrowly

brown-ochreous, with a dark line on the edge; disk, 1st ⅔rds slightly convex, black, strongly punctured in a row round the front and sides and slightly down the middle; the last 3rd ochreous, more or less obscured by deep black punctures in patches. *Scutellum* somewhat flat, depressed in the centre, black, finely punctured, deeper on the sides. *Elytra; Clavus* with 3 rows of contiguous, strong, black punctures; the side next the scutellum black, except a spot near the base; on the outer side, between the rows of punctures, smooth and broadly ochreous for one half its length from the base; *Corium* dingy ochreous, with strong black punctures in rows; anterior margin with a row of punctures; disk posteriorly with a large, sub rhomboidal, black spot, with a narrow white streak on its lor margin, a triangular white spot below the black one, and usually another irregular one above it; *Membrane* black, the base yellowish; at the exterior basal angle a small whitish spot; posterior margin with 3 large, angulated, grayish spots between the nerves (often wanting); nerves pale. *Sternum* black, finely punctured, more strongly on the front and sides. *Legs; Coxæ* strong, black, at the base outwardly a yellow spot; 1st pair in front with a small node bearing a hair; *fulcra* piceous; *thighs* black, with fine yellow pubescence; 1st pair beneath with 1 tooth; *tibiæ* black, with fine yellow pubescence; the basal half of the 1st pair and the extreme base of the others brown-red; the hairs, strong, black.

Abdomen beneath with fine yellowish pubescence.

Length, 3—3½ lines.

Local. Cobham Common and Addington Hills, Surrey, under heather, in September.

Species 3.—CALYPTONOTUS PEDESTRIS.

LYGÆUS PEDESTRIS, *Panz.* F. G. 92, 14; *Zett.* F. Ins. Lap. i, 470, 4 (1832); Ins. Lap. 263, 5 (1840).

PACHYMERUS PEDESTRIS, *Schill.* Beitr. i, 70, 10, t. 6, fig. 7 (1829); *Hahn*, Wanz. i, 62, t. 10, fig. 38 (1831); *Burm.* Handb. ii, 296, 7 (1835); *H. Schf.* Nom. Ent. i, 44 (1835).

— INSIGNIS, *Boh.* Vet. Akad. Förh. 53, 5 (1852).

— (PACHYMERUS) PEDESTRIS, *Flor*, Rhyn. Liv. i, 275, 25 (1860).

RHYPAROCHROMUS MUNDULUS, *A. Dohrn*, Stett. Ent. Zeit. xxi, 160, 17 (1860).

— PEDESTRIS, *Fieb.* Europ. Hem. 195, 11 (1861); *Stål*, Vet. Akad. Förh. 221, 5 (1862).

Black, slightly shining; 2nd joint of the *antennæ* yellowish-red; *corium* yellowish-brown, posteriorly with a clear white spot and a black one above it; apex of *membrane* white; *tibiæ* yellowish-red.

Head delicately punctured, with fine yellowish pubescence. *Antennæ* black, with yellowish pubescence; 1st joint with a few, long, black, prominent hairs; apex of the 1st and 3rd brown; 2nd yellowish-red, except the apex, which is piceous; rarely the entire joint is piceous. *Rostrum* pitchy-black.

Thorax.—Pronotum; 1st ⅔rds black, very convex, the colour hindwardly curving gradually, and at the sides suddenly, forwards; disk smooth; a row of punctures within the anterior and side margins, the latter narrow, black; the last 3rd ochreous, with distinct brown punctures; sides clear, pale yellow, their margins broad yellow; the callus posteriorly black. *Scutellum* black, finely punctured; apex yellow-brown. *Elytra; Clavus* yellow-brown, with 3 rows of strong black punctures, the two inner rows near together, between them and the outer row a long, pale yellow streak; *Corium* yellowish-brown or red-brown, rather finely punctured; anterior margin broad, clear yellow, with a brown edge for about ½ its length, thence to the apex narrow, black; disk, within the apical angle a large, subangular, white spot, above which is an irregular black spot, sometimes large, sometimes small; the 1st nerve on its basal half, the apex, and sometimes the claval suture, black; *Membrane* black, with a round white spot at the apex, and a wide yellowish streak on the base of the 4th nerve. (In all the English examples we have seen the membrane is abbreviated, leaving the last 2 segments of the abdomen uncovered, and the apical spot is very faint.) *Sternum;* a white spot at the base of each coxa; *Prosternum;* at the sides a large, angulated, yellowish spot; *Meso-* and *Metasternum* on the posterior margin laterally, whitish or yellowish. *Legs* yellowish-red; *thighs;* 1st pair more or less dark in the middle, the colour varying from a piceous spot to black throughout, except at the ends; 1 strong tooth near the end, and 2 or 3 small ones behind it; 2nd and 3rd pairs with a broad black ring before the apex; *tibiæ;* 1st pair slightly bent, black at the apex; 2nd and 3rd pairs black at the

base and apex; *tarsi* piceous, the 1st joint more or less yellow-brown.

Abdomen beneath with yellowish pubescence, the posterior segments with long, projecting, red hairs.

Length, 2½ lines.

Scarce. "On rotten trunks of trees" (*Flor*); "often gregarious, in the spring, under the bark of *Æsculus*" (horse-chestnut) (*Fieb*). Under decaying leaves, in May, Lee; Purley Downs, near Croydon.

Genus 4.—EREMOCORIS, *Fieb.*

Long, elliptic; flat above, sides almost parallel.

Head 5-sided, narrow, convex; *Face;* central lobe prominent; side lobes shorter than the central lobe, suddenly deflected outwardly. *Antennæ* long, slender; 1st joint long, ⅔rds of its length reaching beyond the end of the face, not thickened, slightly clavate; 2nd and 3rd scarcely thickened at the apex; 2nd 1½ times longer than the 1st; 3rd nearly as long as the 2nd; 4th not so long as the 3rd, cylindrical, the ends pointed. *Eyes* moderate, somewhat remote from the pronotum. *Ocelli* large, distant. *Rostrum* reaching to the end of the metasternum; longer in the ♀.

Thorax.—Pronotum trapeziform, almost quadrangular; anterior margin much longer than the width of the head across the eyes, concave, depressed, with a very narrow, raised rim; anterior angles rounded; sides nearly straight, their margin narrow, reflexed, widened inwardly beyond the middle; posterior margin concave, the ends produced over the clavus; disk, 1st ⅔rds very convex, the last 3rd flattened, depressed in the centre; within the hinder angles a long, strong, narrow callus. *Scutellum* large, triangular, the centre much depressed. *Elytra* as long as the abdomen, at the base a little wider than the base of the pronotum; *Clavus* slightly deflected to the corium; claval suture depressed; *Corium;* sides nearly straight, posteriorly rounded; the anterior margin reflexed, wide at the base, and gradually narrower; the 1st nerve incrassated on the basal half; *Membrane;* anterior and posterior margins rounded; disk with 5 nerves; the 1st short, close and parallel to the anterior margin (often wanting); the 2nd curved to the anterior margin; the 3rd nearly straight; the 4th and 5th arising close together at the inner angle, curving inwardly and outwardly; the 4th going straight,

the 5th sinuate, to the posterior margin. *Sternum; Mesosternum* keeled in front, hindwardly with a rhomboidal furrow, ending at the point of the xyphus; *Metasternum* unequally rhomboidal, hindwardly prolonged. *Legs: thighs;* 1st pair incrassated, flattened, fusiform; the underside with a slight channel, with small teeth on the edges, and on the inner edge two larger than the rest; *tibiæ;* 1st pair strong, bent at the apex, much widened inwardly, with a deep channel on the side; on the underside, in the ♂, 5 or 6 very small spines, the last two being the largest; in the ♀ these spines are replaced by bristles; *tarsi* slender; 1st joint, on the 1st and 2nd pairs, about 1½ times, on the 3rd pair twice, longer than the 2nd and 3rd; 2nd and 3rd joints short.

Species 1.—EREMOCORIS ERRATICUS.

LYGÆUS ERRATICUS, *Fab.* F. S. iv, 167, 109 (1794); S. R. 232, 139 (1803); *Fall.* Mon. Cim. 65, 12 (1807); Hem. Succ. 60, 19 (1829); *Zett.* F. Ins. Lap. i, 472, 9 (1832); Ins. Lap. 264, 1 (1840); *Panz.* F. G. 121, 3.

PACHYMERUS ERRATICUS, *Schill.* Beitr. i, 74, 15 (1829); *H. Schf.* Nom. Ent. i, 44 (1835).

— FENESTRATUS, *H. Schf.* Wanz, iv, 95, t. 140, fig. 437 (1839).

RHYPAROCHROMUS ERRATICUS, *Sahlb.* Geoc. Fen. 62, 12 (1848).

PACHYMERUS (PACHYMERUS) ERRATICUS, *Flor,* Rhyn. Liv. i, 279, 27 (1860).

EREMOCORIS ERRATICUS, *Fieb.* Europ. Hem. 188, 1 (1861); *Stål,* Vet. Akad. Förh. 219, 1 (1862).

Elliptic, black; the last 3rd of the *pronotum,* the *corium* and *clavus,* yellow-brown, the corium with a central black spot; the *membrane* with a large white spot at the outer basal angle, and another at the outer posterior angle.

Head finely punctured. *Antennæ* with fine yellowish hairs, somewhat prominent on the 1st joint. *Rostrum* piceous.

Thorax.—Pronotum; 1st ⅔rds black, with fine distant punctures; the last 3rd yellow-brown, with larger, deeper, and more distant punctures; a broad black line continued from the front down the inner side of the callus, and sometimes two large, diverging black

spots in the middle; lateral margins ochreous, with a brown line on the edge; where they are widened inwardly a long-sided triangle is formed. *Scutellum* with fine distant punctures, closer and deeper on the sides. *Elytra; Clavus* yellow-brown, with 4 rows of brown punctures; *Corium* yellow-brown or red-brown, with brown punctures in rows; a central spot black; the lower part of the inner nerve fuscous. Sometimes the base of the clavus and corium paler, or only a broad pale dash on the corium; sometimes the lower end of the clavus, and the corium, from the inner margin as far as the central spot, and also beneath it, are included in one black patch, and one or two black spots are within the posterior margin; anterior margin ochreous, with a brown line on the edge; posterior margin red-brown, hindwardly piceous. *Membrane* black, posteriorly fuscous; a large semi-oval white spot at the exterior basal angle; a yellowish spot at the inner basal angle, and a white, less clearly defined, spot at the inner posterior angle; nerves whitish posteriorly. *Sternum; Pro-* and *Metasternum* posteriorly, and a spot at the base of the coxa reddish-brown. *Legs; fulcra* reddish-brown; *thighs* black, apex reddish-brown; *tibiæ;* 1st pair reddish-brown on the basal 3rd, the rest piceous, or altogether piceous; 2nd and 3rd pairs yellow-brown, the end, sometimes the lower half, piceous; *tarsi* reddish-brown; 2nd and 3rd joints piceous; sometimes all the joints, especially of the 1st pair, piceous.

Abdomen black; *Connexivum* reddish-brown, the base black. Underside with fine golden pubescence, the last segments with a few long, projecting, yellow hairs.

Length, ♂ 3, ♀ 3½ lines.

Scarce. Taken singly, from June to September, by beating juniper bushes, at Sanderstead Downs and Headley Lane.

Dr. Power captured, in April, 1864, at Littlington, Cambridgeshire, under dead leaves at the bottom of a hedge, about 30 specimens, which are all of one type, and, we thought, distinct from our usual form of *E. erraticus;* but Dr. Fieber, to whom an example of each kind was sent, pronounces them not to be specifically different. Dr. Power's examples differ from the specimens taken at Sanderstead in the following particulars:—The insects are shorter, and the form is oval; the *Pronotum* is shorter, narrower in front, and posteriorly is red-brown. The *Elytra* have the *Corium* and *Clavus* rich chocolate-brown, more or less mottled with ochreous punctures and lines,

the base of the *Corium* with a large subtriangular spot, a small round one beyond the middle, close to the anterior margin, and the apex, ochreous; with these exceptions, the ground colour extends to the anterior margin, and is often darker there above the round spot; on the *Membrane* the 3rd nerve is white on the basal 3rd. Of the *thighs*, the 1st pair only are black or piceous-black; the 2nd and 3rd pairs piceous, red-brown on the basal ½; the 3rd pair of *tibiæ* shorter and stouter.

Genus 5.—DIEUCHES, *A. Dohrn.*

(Stett. Ent. Zeit. xxi, 159, 1860.)

Long, narrow, elliptic, the sides nearly parallel.

Head 5-sided, convex: *Face;* central lobe broad in front; side lobes short, compressed. *Antennæ* long, thin; 1st joint cylindrical, ½ its length reaching beyond the end of the face; 2nd, 3rd and 4th, in length subequal; 2nd and 3rd scarcely thickened at the apex; 4th cylindrical, tapered at the ends. *Eyes* large, semiglobose, projecting beyond the anterior angles of the pronotum. *Ocelli* moderate, distant. *Rostrum* reaching to the 2nd pair of coxæ.

Thorax.—Pronotum long, trapeziform; anterior margin straight, shorter than the width of the head across the eyes, the angles obtuse; side margins nearly straight, much reflexed, widened internally beyond the middle; hinder angles square, obtuse; posterior margin very slightly concave; disk, the 1st ½ convex, the last ½ flat, with a slight central keel, and raised into a callus within the hinder angles. *Scutellum* long, triangular, slightly convex. *Elytra; Clavus* very slightly deflected outwards; *Corium* slightly convex, anterior margin reflexed; *Membrane* with 5 nerves; the 1st 3 curved, the 1st 2 ending on the anterior margin, and the 3rd at the apex; the 4th and 5th arising at the inner basal angle, curved outwardly and inwardly, and then gradually to the posterior margin. *Sternum; Mesosternum* in front with a short sharp keel; hindwardly with a furrow ending in the xyphus; *Metasternum* square-rhomboidal, hindwardly raised, with a slight, sharp, central keel. *Legs* long, slender; *thighs*, 1st pair fusiform, flattened, not much incrassated; beneath, a slight channel with small teeth on both edges; *tarsi;* 1st joint long, on the 3rd pair nearly 3 times as long as the 2nd and 3rd together.

Abdomen.—2nd segment, beneath, with a slight nodiform process in the middle, pointing towards the base.

Species 1.—Dieuches luscus.

Lygæus luscus, *Fab.* E. S. iv, 165, 103 (1794); S. R. 231, 133 (1803); *Wolff*, Ic. Cim. 145, t. 14, fig. 139 (1804).
— quadratus, *Panz.* F. G. 92, 11.
Pachymerus luscus, *Schill.* Beitr. i, 67, 6, t. 6, fig. 4 (1829); *Hahn*, Wanz. i, 48, t. 8, fig. 30, (1831); *Burm.* Handb. ii, 295, 6 (1835); *H. Schf.* Nom. Ent. i, 45 (1835).
Beosus quadratus, *Am. et Serv.* Hém. 254, 1 (1843).
Ischnotarsus luscus, *Fieb.* Europ. Hem. 192, 4 (1861).

Black; the margins and posterior $\frac{1}{2}$ of the *pronotum* ochreous; *elytra* ochreous; beyond the middle a broad, irregular band nearly across the disk, and a broad line on the posterior margin, black.

Head with fine yellowish, appressed hairs, and round, irregularly placed punctures. *Antennæ* brownish-yellow, with fine pubescence; 1st joint with a brownish spot or ring; 2nd and 3rd brown at the apex; 4th black, narrowly yellowish at the base. *Eyes* brown. *Ocelli* reddish. *Rostrum* yellow, the last joint piceous.

Thorax.—Pronotum; anterior and side margins yellow, the latter with a brown line on the edge; disk, 1st $\frac{1}{2}$ or more black, strongly punctured on all the sides, finer in the centre; hinder portion ochreous, with large, deep, black punctures; the central line clear, a line on each side of it, the callus, and the base of the side margins, black. *Scutellum* transversely, deeply crenate-punctate, black; a long spot at each side and the apex ochreous. *Elytra; Clavus* ochreous, shaded with brown; with 3 rows of brown punctures, posteriorly confluent; *Corium* ochreous; anterior margin with a brown line on the edge, posterior margin pale; disk with brown punctures in rows; nerves pale; below the middle a broad, 5-sided, transverse, black band, extending from the anterior margin as far as the 2nd nerve, beyond which is a brown line; below the band a large, triangular whitish spot extends from the anterior margin to the middle, where a black-punctured line comes down from the band above; beyond this a small spot lies in the inner posterior angle, and under the large white spot a deeply punctured black line within the posterior margin; apex black; *Membrane* fuscous-black; base black, outwardly with a deep transverse impression; nerves on the basal 3rd pale. *Sternum* black, crenate-punctate; anterior and posterior margins of *Prosternum*

and posterior margin of *Metasternum* ochreous, with brown punctures; at the base of the coxæ a pale yellow spot. *Legs* ochreous or yellow; *thighs* with a broad black ring; on the 1st pair a large black spot on the upper side; *tibiæ* brown at the base, with strong, distant, black hairs; *tarsi* brown at the end.

Abdomen black, with fine yellowish pubescence.

Length, 2¾ lines.

Rare. A few specimens in old collections; no recent examples: Parley Heath (*Dale*). Fieber says: "Under fallen leaves, on plants and at roots of trees, not scarce throughout the year; chiefly in Central and Southern Europe."

Genus 6.—SCOLOPOSTETHUS, *Fieb.*

Oval, sides somewhat parallel.

Head 5-sided, narrow, convex; *Face* triangular; central lobe short, prominent, widest in front; side lobes short, much deflected; anterior margin concave; antenniferous processes well developed, pointing outwards. *Antennæ*, 1st 3 joints slightly clavate, 4th fusiform; 1st not thickened, long, ½ its length reaching beyond the end of the face; 2nd ⅓rd longer than the 1st; 3rd and 4th in length subequal, shorter than the 2nd. *Eyes* moderate, semi-globose, somewhat removed from the base of the head. *Ocelli* small, distant. *Rostrum* strong, reaching across the mesosternum; 1st and 3rd joints in length subequal, 2nd longer, 4th short.

Thorax.—Pronotum trapeziform; anterior angles rounded; sides slightly contracted in the middle, their margins narrow in front, widened inwardly at the middle; hinder angles prominent, obtuse; posterior margin concave; disk, 1st ⅓, or rather more, convex, the remainder flatter, but raised into a callus within the hinder angles; across the middle a depression, deeper at the sides. *Scutellum* large, triangular, depressed in the centre, hindwardly raised, subcarinate. *Elytra* (when developed) as long as the body. *Clavus* deflected to the corium; claval suture depressed; *Corium;* anterior margin narrow, reflexed at the base; disk inwardly flat, outwardly and posteriorly convex; 1st nerve strong; *Membrane* (often but partially developed); base with a deep transverse depression; nerves 5; the 1st very short; the 2nd and 3rd arising together, nearly straight, but divergent, the 2nd going to the anterior margin and the 3rd to the

apex; the 4th and 5th arising near together, before the inner basal angle, curving inward and then outward parallel to each other, then slightly diverging and straight to the posterior margin. *Sternum; Mesosternum* in front with a sharp keel, to the posterior end of which is joined a lozenge-shaped furrow, ending in the xyphus; in the ♂ this is narrower, with a raised process on each side; *Metasternum* rather narrow, the raised middle with a rhomboid depression. *Legs: thighs;* 1st pair greatly incrassated, fusiform, flattened beneath, the inner edge finely dentate, with one large tooth in the middle, or angulated beneath, with the 1st ½ keeled, ending in a long obtuse tooth, and the 2nd ½ finely dentate, with a large tooth in the middle (*S. contractus*); *tibiæ;* 1st pair curved, in the ♂ widened inwardly at the end, and with 2 very small teeth, or with 3 or 4 other very fine serrations on the inner margin; *tarsi* long; 1st joint as long as the 2nd and 3rd, on the third pair twice as long.

Species 1.—SCOLOPOSTETHUS PICTUS.

PACHYMERUS PICTUS, *Schill.* Beitr. 79, 22, t. 7, fig. 1 (1829); *H. Schf.* Panz. F. G. 120, 5; *Hahn*, Wanz. i, 64 & 140, t. 10, fig. 39 (1831); *H. Schf.* Nom. Ent. i. 45 (1835).

LYGÆUS PODAGRICUS, *Fall.* Hem. Suec. 63, 24 (1829); ? *Fab.*

PACHYMERUS (PACHYMERUS) PODAGRICUS, var. 1, *Flor*, Rhyn. Liv. i, 279 (1860).

SCOLOPOSTETHUS PICTUS, *Fieb.* Europ. Hem. 189, 5 (1861).

Black. *Antennæ* long, slender, yellow-brown. *Pronotum* in front scarcely wider than the head across the eyes; side margins with a white spot; posterior portion of the disk ochreous, with a middle white line. *Clavus* and *corium* pale ochreous; the former with a posterior dark spot; the latter posteriorly with a broad black band, and across the middle 4 black spots, forming with those on the clavus an irregular transverse row. *Legs* yellow; *thighs*, 1st pair black on the sides, 3rd pair with a narrow subapical black ring. Distinguished from *S. adjunctus* by the greater size; the slender, pale *antennæ;* the *pronotum* narrower in front; the transverse row of spots on the *corium* not being straight, and the black ring on the posterior thighs.

Head dull, finely punctured; apex of the central lobe of the *Face* rufous. *Antennæ* long, slender, finely pubescent, yellow-brown; 3rd and 4th joints sometimes brownish. *Eyes* and *Ocelli* brown. *Rostrum* yellowish, 1st joint piceous.

Thorax.—Pronotum dull, scarcely wider across the anterior angles than the head across the eyes; anterior margin narrowly rufous; anterior angles rounded; sides divergent to the hinder angles, side margins whitish, with a brown line on the edge, at the widened part clear white; hinder angles with a black spot; disk in front finely punctured; posterior portion ochreous, with distinct brown punctures, a whitish longitudinal middle line and an indistinct brownish spot on each side of it. *Scutellum* finely punctured, apex sometimes rufous. *Elytra; Clavus* pale ochreous, with 4 rows of brown punctures and a posterior brown or piceous spot; *Corium* slightly shining, pale ochreous, posteriorly broadly black or piceous; on each elytron 2 black or brown spots, the inner one narrower and nearer to the base than the outer one, the 4 forming with the 2 on the clavus an irregular transverse row; between the spots and the posterior band the ground colour is clearer and lighter; punctures brown; *Membrane* shining, whitish; nerves brown, except the base of the 2 outer ones. *Sternum* finely punctured; an orange spot at the base of each coxa; *Prosternum;* anterior, lateral, and posterior margins orange; *Metasternum;* posterior margin broadly orange; *Legs* yellow; *thighs;* 1st pair with a long black spot on each side; 2nd pair sometimes indistinctly brownish before the apex; 3rd pair with a narrow black ring before the apex; *tarsi;* 3rd joint brownish towards the apex.

Abdomen beneath, shining, with a fine whitish pubescence.

Length, 2 lines.

Rare. One specimen near London; one, Littlington, Cambridgeshire, in February (*Dr. Power*); and one at Glanvilles Wootton, Dorset, in July (*Dale*).

Species 2.—SCOLOPOSTETHUS ADJUNCTUS.

PACHYMERUS DECORATUS, Abänd. *b* & *c*, *Hahn*, Wanz. i, 139 (1831).
— (PACHYMERUS) PODAGRICUS, p. *Flor*, Rhyn. Liv. i, 277, 26 (1860).
SCOLOPOSTETHUS AFFINIS, var. *b*, *Stål*, Vet. Akad. Förh. 220, 1 (1862).

Black. *Antennæ* stout, 1st and 2nd joints orange. *Pronotum* wider

across the anterior angles than the head across the eyes; the last 3rd fulvous, with 2 spots and the callus black; lateral margins with a large white spot beyond the middle. *Corium* whitish, on each elytron with 2 black spots, forming with 2 on the *clavus* a central, transverse, straight row; posteriorly broad, black. *Legs;* 2nd and 3rd pairs yellow.

Head finely punctured. *Antennæ* stout, with very fine pubescence; 1st and 2nd joints orange, 3rd and 4th black, apex of the 4th sometimes piceous. *Eyes* brown. *Ocelli* black. *Rostrum* yellow, 1st joint piceous.

Thorax.—Pronotum with fine, short, yellowish hairs; abruptly and broadly widened immediately behind the anterior margin; lateral margins ochreous, with a brown line on the edge; beyond the middle, where they are widened, a large white spot; disk in front black, finely punctured, hindwardly fulvous, with large, distinct, punctures and a central white line; 2 large spots on the posterior margin and the callus at each hinder angle, generally also including their lateral margin, black. *Scutellum* black, finely punctured, apex sometimes slightly ochreous. *Elytra; Clavus* ochreous or whitish, with 4 more or less perfect rows of strong brown punctures and a posterior long brown spot; *Corium* whitish, with 2 rows of punctures next the claval suture and a row of similar punctures on each side of the strong, raised, brown 1st nerve; the punctures on the basal half brown, on the posterior half black; the rest of the disk without punctures, except a few fine ones posteriorly; in the middle of each elytron 2 black spots, the 1st oval, on the anterior margin, the 2nd angulated, beyond the 1st nerve, the 4, together with the 2 spots on the clavus, forming a straight transverse row; posterior margin with a broad black band, inwardly indented; between it and the anterior black spots 2 large, conspicuous white spots, the inner one angulated; apex yellow; *Membrane* whitish, base with a black spot in the middle, otherwise, including the nerves, clear; the nerves beyond the base black. *Sternum* strongly punctured in the centre and on the margins of the segments, ochreous at the sides; a large yellow spot at the base of each coxa; *Prosternum* on the anterior and posterior margins, *Metasternum* on the posterior margin, fulvous. *Legs; coxæ* fulvous or yellow; *thighs* fulvous or yellow, 1st pair with a large black or piceous spot on each side, at times forming a broad ring, the 3rd pair rarely with a dusky spot; *tibiæ* and *tarsi* yellow.

Abdomen above, base and sides yellowish; *Connexivum* piceous on the edge; underside with fine whitish pubescence, fulvous at the apex.

Length, 1¾—1⅞ line.

Common in hedges, under leaves, and at the roots of grass in dry places, from April to September.

Note.—As a rule, the membrane of the elytra, and the wings are only rudimentary; in such cases the *pronotum* is subquadrangular, being but little widened posteriorly, and the *scutellum* is small.

Species 3.—Scolopostethus affinis.

Pachymerus affinis, *Schill.* Beitr. 80, 25 (1829).
— decoratus, *Hahn*, Wanz. i, 139, t. 22. fig. 71 (1831).
— (Pachymerus) podagricus, p. *Flor*, Rhyn. Liv. i, 277, 26 (1860).
Scolopostethus affinis, *Fieb.* Europ. Hem. 189, 6 (1861); *Stål.* Vet. Akad. Förh. 219, 1, var *a* (1862).

Black. *Antennæ* black, the basal ¼ or ½ of the 2nd joint fulvous (sometimes also the base and apex of the 1st); posterior portion of the *pronotum* rufous, the side margins with a white spot; *corium* dusky ochreous, on each elytron with 2 black spots, forming, with 2 on the clavus a transverse, slightly curved row, below which are 2 whitish blotches on each corium, the inner one angulated; posterior margin broadly black. *Thighs;* 1st pair black, 2nd and 3rd pairs fulvous or yellow, with a broad black ring before the apex.

Narrower, more parallel and of a darker hue than *S. adjunctus;* also distinguished by the dark 1st and 2nd joints of the *antennæ*, the spots on the *corium* smaller and more indistinct, and the dark rings on the 2nd and 3rd pairs of *thighs*.

Head finely punctured. *Antennæ* finely pubescent, the extreme base (sometimes also the apex) of the 1st joint, and the basal 4th or ½ of the 2nd, fulvous. *Eyes* piceous or brown. *Ocelli* black. *Rostrum* piceous, the 1st joint darker.

Thorax.—*Pronotum* wider in front than the head across the eyes; anterior margin usually narrowly fulvous; anterior angles rounded; lateral margins yellowish, with a brown line on the edge, at the wide part broadly white; disk, rather more than the anterior

half black, very delicately punctured; posterior portion fulvous, with distinct brown punctures; a central, thin, pale line, 2 large spots on the posterior margin (sometimes wanting), and the callus at each hinder angle, black. *Scutellum* black, finely punctured. *Elytra; Clavus* dusky whitish or ochreous, the punctures and a posterior spot brown; *Corium* dusky whitish or ochreous; two rows of punctures next the claval suture and a row outside the 1st nerve brown, the rest of the disk without punctures, except a few fine ones towards the posterior margin; on the middle of each elytron two narrow black spots, one of them between the anterior margin and the 1st nerve, the other between the 1st and 2nd nerves, forming, with the posterior spots on the clavus, a slightly curved transverse row; posterior margin with a broad black band, the space between it and the transverse row of spots appearing as 2 clear whitish blotches, the inner one angulated: *Membrane* dusky whitish; base in the middle with a black blotch; anterior and posterior margins and the nerves more or less black or fuscous. *Sternum* finely punctured; a spot at the base of each coxa yellow; *Prosternum;* anterior, lateral and posterior margins fulvous, or the lateral margins with a pale spot; *Meso-* and *Metasternum* at the sides ochreous, *Metasternum* on the posterior margin fulvous. *Legs; fulcra* piceous; *thighs;* 1st pair black, base and apex fulvous or yellow; 2nd and 3rd pairs fulvous or yellow, with a broad black ring beyond the middle; *tibiæ* fulvous or yellowish, 1st pair piceous at the apex; *tarsi* yellowish, the last joint piceous.

Abdomen with fine whitish pubescence; the centre of the genital segments in the ♀, generally fulvous.

Length 1½—1¾ line.

Note.—Sometimes the membrane of the elytra is but rudimentary; then the pronotum is narrower and almost quadrangular, being scarcely widened posteriorly.

Very common, especially under heath, nearly all the year through.

Species 4.—SCOLOPOSTETHUS CONTRACTUS.

PACHYMERUS CONTRACTUS, *H. Schf.* Nom. Ent. i, 45 (1835); Wanz. iv, 97, t. 140, fig. 440 (1839).
SCOLOPOSTETHUS — *Fieb.* Europ. Hem. 188, 1 (1861).

Dull, black; *clavus*, base of the *corium*, and a posterior outward spot on the latter, dull ochreous.

Head finely and closely punctured, almost granulose. *Antennæ* pitchy-black. *Eyes* piceous.

Thorax.—Pronotum very narrow in front; disk closely and strongly punctured, the punctures on the second ½ larger and sharper than in front; side margins in the middle yellowish, with a brown line on the edge; the callus, and sometimes the posterior margin, piceous. *Scutellum* closely punctured, strongest on the sides. *Elytra; Clavus* ochreous or piceous, with 4 rows of strong, brown punctures; the middle nerve strong, curved inwards; *Corium*, anterior margin ochreous, with a brown line on the edge; base ochreous, with brown punctures, not so large as those on the clavus, the posterior ½ with still finer black punctures, or the middle piceous, outwardly with a more or less distinct ochreous spot, and in the centre a narrow ochreous line jutting down from the basal portion: *Membrane* whitish or light fuscous, hindwardly darker; the base, especially on the outer half, white, the middle, close to the posterior margin of the corium, piceous; nerves brown or piceous. *Sternum* finely punctured. *Legs; thighs* black, apex piceous; *tibiæ* piceous, with short, rather projecting, yellowish hairs; *tarsi* paler.

Abdomen with fine yellowish pubescence.

Length, 1½ line.

Not scarce in the London district, under leaves, field refuse, and at the roots of grass, all the year round.

Genus 7.—PERITRECHUS, *Fieb.*

Elliptic.

Head short, 5-sided, convex: *Face* deflected in a curve; central lobe prominent, longer than the side lobes; antenniferous processes very short, inserted far below the eyes. *Antennæ* short; 1st joint short, stout, narrow at the base, about ½ its length reaching beyond the end of the face; 2nd and 3rd slightly thicker at the apex; 2nd twice as long as the 1st, 3rd not so long as the 2nd; 4th fusiform, longer than the 3rd, but not so long as the 2nd. *Eyes* rather prominent, projecting a little beyond the anterior margin of the pronotum. *Ocelli* small, distant. *Rostrum* reaching across the metasternum.

Thorax.—Pronotum trapeziform; anterior margin shorter than the width of the head across the eyes; disk more convex in front than behind, depressed across the middle, so that the lateral mar-

gins become there somewhat wider inwardly; hinder angles obtuse, with a strong callus within them; posterior margin concave. *Scutellum* triangular, apex long, acute. *Elytra* as long as the abdomen; *Corium;* anterior margin very slightly curved and reflexed; posterior margin straight; *Membrane* with 5 nerves; the 1st 3 arising on the outer half of the base; the 1st very short (sometimes scarcely visible), the 2nd longer, both ending on the anterior margin, the 3rd curved inwards at the base, then straight to the posterior margin; the 4th and 5th arise near together at the inner basal angle, curve inwards and then outwards, and are then straight. *Sternum; Mesosternum* in front with a short keel; xyphus short, acute, depressed. *Legs* moderate; *thighs;* 1st pair thicker than the others, short-fusiform, on the underside with 2 or 3 very small teeth; *tibiæ* straight, a little widened at the apex; *tarsi;* 1st joint on the 1st and 2nd pairs as long as other 2 joints, on the 3rd pair much longer.

Abdomen thick, above flat, beneath convex, almost ridged, the 2nd segment with a slight keel; *Connexivum* reflexed, deep at the base of the abdomen.

Species 1.—PERITRECHUS LUNIGER.

PACHYMERUS LUNIGER, *Schill.* Beitr. 67, 5, t. 3, fig. 1 (1829); *Panz.* F. G. 121, 1; *H. Schf.* Nom. Ent. i, 45 (1835).
LYGÆUS SAHLBERGII, *Fall.* Hem. Suec. 56, 13 (1829).
PERITRECHUS LUNIGER, *Fieb.* Europ. Hem. 184, 3 (1861); *Stål,* Vet. Akad. Förh. 218, 3 (1862).

Black and ochreous, dull or slightly shining; basal half of 2nd joint of the *antennæ* red; *corium* posteriorly with 2 large, angulated black and white spots.

Head black, finely crenate-punctate, with very short, appressed, golden hairs. *Antennæ* black, basal ½ of the 2nd joint red. *Eyes* brown. *Ocelli* black.

Thorax.—Pronotum almost as broad in front as the head across the eyes; anterior angles slightly rounded; sides slightly sinuate within the margin; lateral margins nearly straight, ochreous, with a black line on the edge, but becoming entirely black and narrower beyond the place of their greatest width; disk, 1st ½ convex, with

very short, appressed, golden hairs, finely punctured, black; on the centre, and broadly round the hinder angles, a white gloss or tinge; posterior ½ ochreous, with numerous round black punctures, which in the middle and at the hinder angles form spots; the callus ochreous. *Scutellum* black, finely punctured, the centre with a fine depressed line, on either side of which, at the base, a whitish spot; apex ochreous, smooth. *Elytra; Clavus* ochreous, with contiguous black punctures in 3 rows, posteriorly confluent, and forming lines; the base and a streak on the inner side of the apex black; the side next the scutellum with a pale streak; *Corium* deep ochreous; anterior margin clear, unpunctured, with a brown line on the edge; posterior margin yellow-brown, with a row of brown dots; disk punctured in rows, which posteriorly become confluent, and surround 2 long, angulated spaces, whose base is towards and near the posterior margin; the upper portion of these angles is black, the lower and lesser portion whitish; apex of the corium (within the margin) black; *Membrane* fuscous-black, with a large, clear, white spot at the outer and inner basal angles and on the apex; nerves whitish. *Sternum* black, with a white gloss, and fine, distinct, round punctures. *Legs* black, a spot at the base of the coxæ, the *fulcra* and apex of the *thighs*, red-brown; *tibiæ;* 1st pair red-brown; apex and base on the upper side black.

Abdomen black; beneath delicately punctured, clothed with fine silvery pubescence.

Length, 2—2½ lines.

In dry and sandy places, under leaves, &c. Darenth Wood, April; Bexley, November; Brighthampton (*S. Stone*); Southend (*Wollaston*).

Species 2.—Peritrechus nubilus.

Lygæus nubilus, *Fall.* Hem. Suec. i, 54, 10 (1829); *Zett.* Ins. Lap. 263, 8 (1840).

Pachymerus nubilus, *Panz.* F. G. 121, 5; *Schill.* Beitr. 68, 7, t. 7, fig. 2 (1829); *H. Schf.* Nom. Ent. i, 45 (1835).

— geniculatus, *Hahn,* Wanz. i, 68, t. 10, fig. 41 (1831).

Rhyparochromus irroratus, *Curt.* B. E. xiii, 612, 22 (1836).

Beosus nubilus, *Sahlb.* Geoc. Fen. 65, 1 (1845).

Pachymerus (Pachymerus) nubilus, *Flor,* Rhyn. Liv. i, 246, 9 (1860).

Peritrechus nubilus, *Fieb.* Europ. Hem. 184, 2 (1861); *Stål,* Vet. Akad. Förh. 218, 2 (1862).

Black and ochreous, dull; *antennæ* black.

Head black, clothed with fine, appressed, yellow hairs. *Antennæ* black, 1st joint with fine, short, yellow hairs, the other joints with longer, black hairs. *Eyes* brown. *Ocelli* red. *Rostrum* yellowish or brownish; apex and base black in the ♂.

Thorax.—Pronotum much narrower in front than the head across the eyes; sides slightly sinuate; lateral margins narrow, reflexed, with a black line on the edge; disk anteriorly black, finely, indistinctly punctured, with fine, appressed, golden hairs; the posterior portion dull ochreous, more or less obscured, and with distinct, round punctures; the callus at the hinder angles smooth, ochreous, with a black, transverse mark across it, and a yellow spot before it on the margin. *Scutellum* with a deep central furrow and distinct, round punctures; basal ⅔rds black, with fine, yellow, appressed hairs; apical 3rd ochreous at the sides, and without hairs. *Elytra* smooth; *Clavus* and *Corium* dull ochreous, with deep, round, black punctures, closely set together in rows, some of which, on the corium, form 2 long angles whose base is towards and near the posterior margin, the punctures sometimes by their confluence forming lines or spots; anterior margin of the *Corium* clear ochreous, with a brown line on its edge; posterior margin clear, with a row of black punctures; *Membrane* fuscous, the nerves, the base, a broad spot at the inner basal angle, and often spots between the nerves, whitish. *Sternum* black, with a white gloss or tinge, finely black-punctured. *Legs* with very fine, short, yellow hairs; *fulcra* yellow-brown; *thighs* black, apex with a yellow-brown ring; *tibiæ* black or piceous, or the base only dark and the rest yellow-brown or reddish; generally the 1st pair lighter than the others; *tarsi* piceous or black, 1st joint more or less yellow-brown.

Abdomen black; on the underside densely clothed with fine yellow pubescence.

Length, 2—2½ lines.

Not scarce in sandy places, under various plants, and also taken by sweeping. Weybridge and Dartford, Kent, August; Brighthampton, Oxon., May (*S. Stone*); Hastings (—. *Somerville*).

Genus 8.—TRAPEZONOTUS, *Fieb.*

Oval, or long-oval.

Head convex, short, 5-sided, including the eyes not wider than the front of the pronotum; *Face;* central lobe prominent, longer than the

side lobes. *Antennæ;* 1st 3 joints with fine, long, projecting hairs, the 4th with short appressed hairs; the 1st nearly cylindrical, about $\frac{1}{3}$rd of its length projecting beyond the end of the face; the 2nd and 3rd slightly clavate, the 2nd $2\frac{1}{4}$ times as long as the 1st, the 3rd $\frac{3}{4}$ths the length of the 2nd; the 4th long-fusiform, as long as the 2nd, base with a short petiole. *Eyes* large, prominent behind. *Ocelli* distant. *Rostrum* reaching the middle of the mesosternum.

Thorax.—Pronotum short, trapeziform; anterior margin nearly straight; side margins very narrow, scarcely reflexed; hinder angles obtuse, slightly thickened; posterior margin in the middle slightly concave or bisinuate, at the ends produced over the base of the elytra; disk slightly convex, flatter posteriorly. *Scutellum* large, longer than broad, triangular, slightly convex. *Elytra; Clavus* deflected to the corium, with 3 straight rows of contiguous distinct punctures, and sometimes other irregularly disposed punctures between the inner and the next row. *Corium;* anterior margin narrow, reflexed, 1st 3rd nearly straight, last 3rd curved inwardly; disk slightly convex, on the inner side with punctures disposed in rows, outwardly more irregularly punctured; posterior margin nearly straight; *Membrane* with 5 nerves, the 1st 3 curved inwards, posteriorly divergent, the other 2, arising near to each other near the inner basal angle, curving outward, then inward, and then slightly divergent. *Sternum; Mesosternum* in front compressed into a short middle keel; from the middle to the end of the xyphus flat. *Legs: thighs;* 1st pair thick, short-fusiform, beneath with a broad flat channel, of which the inner and sometimes the outer edge is dentate; *tibiæ;* 1st pair curved, widened inwardly at the apex, unarmed, except 1 or 2 apical spines; 2nd and 3rd pairs more or less spinose; *tarsi* long; 1st joint of the 1st and 2nd pairs not so long as the 2nd and 3rd together, on the third pair much longer; the 2nd on all the tarsi very short.

Abdomen very convex beneath, depressed at the base.

Species 1.—Trapezonotus distinctus.

Trapezonotus distinctus (*Fieb.*), *Doug.* and *Scott*, Ent. Ann. p. 145, fig. 4 (1863).

Long-oval, black, dull; 3rd joint of *antennæ* with a broad red ring; posterior portion of *pronotum*, and the *elytra*, lutescent; the latter with rows of confluent black punctures.

Head with appressed yellowish pile. *Antennæ* slender, black, with short prominent hairs; 1st joint red at base and apex; 3rd narrowly red at base, and a broad red ring in the middle; 4th red at base. *Eyes* black. *Ocelli* red. *Rostrum* black, the junction of the joints red.

Thorax.—*Pronotum* finely punctured, anteriorly with fine, appressed hairs; anterior margin in the middle, side margins and posterior margin lutescent; disk dingy black, gradually on the posterior 3rd mixed with lutescent, and with larger punctures; within the hinder angles a short, yellow streak. *Scutellum* black, finely punctured; posteriorly with a long, narrow lutescent spot towards each side. *Elytra* lutescent; *Clavus* with 5 rows of round, contiguous, black punctures, the 2nd and 3rd internal rows irregular and confluent; *Corium*, with black punctures disposed somewhat in rows, leaving some clear spaces, but often confluent and forming black patches; anterior margin clear, unpunctured; apex black; *Membrane* smoky brown, at the base clear white (except a round, black dot close to the *corium*), the white colour spread out at the external angle into a small blotch, and at the internal angle into a large one; just below the base, in the middle, between the nerves, three angulated black streaks; nerves yellowish. *Legs* finely haired; *thighs* black, red at base and apex; *tibiæ* red, slightly blackened at the apex; the spines on the 2nd and 3rd pairs few and slender; *tarsi* reddish, the last joint black.

Underside black, with fine whitish pubescence.

Length, 2¼ lines.

A single specimen, taken in the summer of 1861, at Ventnor, Isle of Wight, by Mr. G. Lewis.

Species 2.—Trapezonotus agrestis.

Pachymerus sylvaticus, *Panz.* F. G. 93, 16 (non *Fab.*).

Lygæus agrestis, *Fall.* Hem. Suec. 55, 12 (1829); *Zett.* Ins. Lap. 263, 9 (1840).

Pachymerus agrestis, *Schill.* Beitr. 70, 9, t. 6, fig. 6 (1829); *Hahn*, Wanz. i, 25, t. 4, fig. 15 (1831); *H. Schf.* Nom. Ent. i, 45 (1835).

Rhyparochromus agrestis, *Sahlb.* Geoc. Fen. 56, 4 (1845).

Pachymerus (Pachymerus) agrestis, *Flor*, Rhyn. Liv. i, 265, 20 (1860).

Trapezonotus agrestis, *Fieb.* Europ. Hem. 191, 3 (1861); *Stål*, Vet. Akad. Förh. 220, 2 (1862).

Oval, slightly convex, black, dull; *pronotum* on the last 3rd and the *elytra* pale dusky ochreous, with black punctures; *antennæ* black, in the ♂ the 1st joint yellow; *legs* black; in the ♂ the 1st pair yellow, and the 2nd and 3rd pairs with the *thighs* more or less yellow at the base and upwards.

Head with fine, appressed, yellowish hairs, and a few strong, projecting black hairs on each side of the central lobe of the face; *Crown* smooth, sides and *Face* finely punctured. *Antennæ* black, the base of the joints narrowly reddish; in the ♂ the 1st joint orange. *Eyes* brown or black. *Ocelli* black. *Rostrum* piceous; the ends of the joints paler.

Thorax.—Pronotum; anterior margin rather longer than the width of the head, yellow-brown in the middle; side margins yellowish, brown on the edge; posterior margin concave across the scutellum, the ends produced roundly over the base of the clavus; disk, first $\frac{2}{3}$rds black, finely punctured and haired, the last 3rd pale, dull ochreous, smooth, with a black line on each side within the margin, and round irregularly-disposed black punctures, which, in the middle and near each hinder angle, are confluent and form spots. *Scutellum* finely punctured. *Elytra* ochreous, more or less obscured by the dark markings; *Clavus* with 3 rows of large black punctures, and between the inner and next row a few others, irregularly disposed; *Corium;* anterior margin clear, unpunctured, brown on the edge; disk with large round, black puuctures, which, on the outer half, are irregularly disposed, on the inner half more in rows, often confluent, forming broad lines, the black colour also spreading out posteriorly and inwardly, and forming a large central rhomboidal blotch; the punctures on the middle of the disk few and scattered; posterior margin broadly black: *Membrane* whitish, with a fuscous cloud between the nerves, or wholly fuscous; margin and nerves white. *Sternum* dull black, finely crenate; anterior margin of the *Prosternum*, posterior margin of the *Metasternum*, and a large spot at the base of each coxa, yellow. *Legs;* end of the *coxæ* and *fulcra* orange-yellow; *thighs* very stout, with fine short hairs, beneath on the inner edge, several small spines and one larger beyond the middle; in the ♂ the 1st pair wholly orange, or with a black spot; 2nd pair orange at base and apex, with a broad black spot or ring before the apex; 3rd pair black, orange at the base and apex; in the ♀ all the legs are black, the apex of the thighs orange; *tibiæ;* 1st pair with fine

hairs, and a few short spines beneath; in the ♂ orange, rarely black at the base and apex; 2nd and 3rd pairs with fine yellowish hairs and strong, projecting black spines; *tarsi* black or piceous in both sexes.

Abdomen beneath, shining, delicately punctured, with fine yellowish appressed hairs; genital segments, with a few projecting black hairs.

Length, $1\frac{3}{4}$—$2\frac{1}{4}$ lines.

Common about London, under moss and leaves, nearly all through the year; Deal, May and August; Scarborough (*T. Wilkinson*).

Genus 9.—Pionosomus, *Fieb.*

Oval, rather flat; outer margins of the *head, pronotum* and *corium* fringed with stiff, projecting hairs.

Head 5-sided, short, broader than long, convex; *Face;* side lobes broad; cheek-plates narrow, long, covering the base of the rostrum. *Antennæ* short, thin, finely haired; 1st joint stout, clavate, not reaching beyond the end of the face; 2nd and 3rd slightly thickened to the apex, the 2nd more than twice the length of the 1st, 3rd nearly as long as the 2nd; 4th fusiform, nearly as long as the 2nd, and slightly thicker. *Eyes* small. *Rostrum* reaching to the end of the mesosternum; 1st joint somewhat shorter than the head.

Thorax.—Pronotum slightly trapeziform, in front wider than the head across the eyes; anterior margin deeply concave; sides nearly straight, the lateral margins narrow, on the 1st $\frac{2}{3}$rds horizontal, continued strongly round the anterior angles, posteriorly almost evanescent; posterior margin concave; disk, rather more than the first $\frac{2}{3}$rds convex, the posterior margin of the convexity rounded; the rest of the disk flatter. *Scutellum* large, equilaterally triangular. *Elytra* flattish; *Membrane* with 4 nerves. *Sternum; Mesosternum* flat, the middle with a sharp keel, and on each side of it posteriorly, extending to the obscure xyphus, a sharp ledge; *Metasternum* rhomboidal, with an arched, sharp, middle keel. *Legs; thighs* 1st pair stout, unarmed; *tibiæ;* 1st pair with 3 small spines beneath; *tarsi;* 1st joint on the 1st and 2nd pairs as long as the 2nd and 3rd together, on the 3rd pair somewhat longer.

Species 1.—PIONOSOMUS VARIUS.

LYGÆUS VARIUS, *Wolff*, Ic. Cim. 148, 142, t. 15, fig. 142 (1804).
— BIMACULATUS, *Zett.* Act. Holm. 73, 23 (1819); *Fall.* Hem. Suec. i, 58, 15 (1829).
PACHYMERUS VARIUS, *Schill.* Beitr. i, 78, 21, t. 6, fig. 12 (1829); *Hahn*, Wanz. i, 69, t. 10, fig. 42 (1831); *H. Schf.* Nom. Ent. 44 (1835).
PACHYMERUS (PACHYMERUS) VARIUS, *Flor*, Rhyn. Liv. i, 256, 15 (1860).
PIONOSOMUS VARIUS, *Fieb.* Europ. Hem. 185, 93 (1861).
PTEROTMETUS — *Stål*, Vet. Acad. Förh. 216, 4 (1862).

Black, with short, black, projecting hairs; *pronotum* and *elytra* varied with yellowish.

Head shining, finely, indistinctly punctured. *Antennæ* black, 2nd joint, except the apex, brownish-yellow; 3rd joint brownish in the middle. *Rostrum* pale piceous, the end black.

Thorax.—Pronotum; disk, anterior portion shining, very finely, distinctly punctured, the hairs fewer and shorter in the middle than at the sides; hinder portion without hairs, finely but closely punctured, and with two large approximate, yellowish spots in the middle; posterior margin yellowish. *Scutellum* very finely crenate-punctate, at the base almost smooth. *Elytra; Clavus* and *Corium* dingy light-brown, with short, stiff, erect black hairs, and black or brown punctures in rows; on the outer half of the *Corium* 3 black spots, the 1st near the base, small and indistinct; the 2nd in the middle, large, sometimes divided into 2, which are long, transverse, and approximating; the 3rd on and including the apex; *Membrane* fuscous-brown, darkest in the middle, whitish posteriorly; base with 2 almost conjoined, whitish spots. *Sternum* dull, a fulvous spot at the base of each coxa; *Metasternum* indistinctly crenate, posterior margin fulvous. *Legs* short, stout; *coxæ* outwardly fulvous; *thighs* black or piceous, apex reddish; *tibiæ* and *tarsi* brown red.

Abdomen beneath, with fine whitish pubescence.

Length, $1\frac{1}{4}$—$1\frac{1}{2}$ line.

In sandy places, under low plants. Specimens were in the collection of the late Mr. Curtis, taken by him on the sand-hills near Sandwich, and Mr. Dale has kindly lent us a specimen which he received from Mr. Curtis.

Genus 10.—Drymus, *Fieb.*

Oval or elliptic.

Head 5-sided, short, pointed; base narrower than the front of the pronotum: *Facè;* central lobe prominent; side lobes as long as the central lobe, compressed, pointed. *Antennæ;* 1st joint not thick, ⅓ its length reaching beyond the end of the face; 2nd twice as long as the 1st, gradually clavate; 3rd ¾ths as long as the 2nd, thick-fusiform; 4th not longer than the 3rd, fusiform. *Eyes* small, semi-globose. *Ocelli* small, distant. *Rostrum* reaching to the 2nd pair of coxæ, 2nd joint longest.

Thorax.—*Pronotum* campanulate, narrower in front than posteriorly, but close behind the anterior margin wider than the width of the head across the eyes; anterior angles rounded; sides concave or constricted in the middle; side margins narrow, reflexed; posterior margin slightly concave; disk convex in front, flatter behind, generally across the middle a depression, within the hinder angles raised into a callus. *Scutellum* triangular, with a wide, deep, transverse hollow in the centre. *Elytra; Corium* outwardly and posteriorly convex, inwardly depressed, at the base rather wider than the pronotum; anterior margin rounded; posterior margin straight; nerves on the basal half prominent; *Membrane* with 4 nerves, the two inner curved at the base, at first inwardly and then outwardly. *Sternum; Mesosternum* transversely convex in front, with a pointed keel; xyphus narrow; *Metasternum* small, rhomboidal, with a sharp keel. *Legs: thighs;* 1st pair not much thickened, fusiform; on the underside a channel, on the anterior edge of which is 1 small tooth; *tibiæ*, 1st pair in the ♂, at the end somewhat bent, widened internally, with a channel on the side; *tarsi;* 1st joint on the 3rd pair much longer than on the 1st and 2nd.

Species 1.—Drymus sylvaticus.

Lygæus sylvaticus, *Fab.* E. S. iv, 163, 98 (1794); S. R. 229, 126 (1803); *Fall.* Mon. Cim. 67, 10 (1807); Hem. Suec. 59, 17 (1829).

PACHYMERUS SYLVATICUS, *Schill.* Beitr. 80, 34, t. 7, fig. 4 (1829); *Hahn*, Wanz. i, 221, t. 36, fig. 115 (1831); *H. Schf.* Nom. Ent. i, 45 (1835); *Kolen.* Mel. Ent. ii, 81, 50 (1845).

RHYPAROCHROMUS SILVATICUS, *Sahlb.* Geoc. Fen. 57, 5 (1848).

PACHYMERUS (PACHYMERUS) SILVATICUS, *Flor*, Rhyn. Liv. i, 247, 10 (1860).

DRYMUS SILVATICUS, *Fieb.* Europ. Hem. 179, 2 (1861).

— — *Stål.* Vet. Akad. Förh. 217, 1 (1862).

Elliptic, dull, black. *Elytra* dirty ochreous-brown.

Head black, finely punctured. *Antennæ* black, the last joint sometimes piceous. *Eyes* and *Ocelli* black. *Rostrum* piceous, 1st joint black.

Thorax.—*Pronotum* wider than long, black, sometimes piceous posteriorly, with close, angulated punctures, finer in front than behind; the callus smooth, piceous. *Scutellum* black, punctured, the punctures finer and closer at the base. *Elytra* mostly as long as the abdomen; *Clavus* ochreous obscured with brown, with 4 rows of strong, close punctures, the 2 central ones confluent; *Corium* dirty ochreous-brown, with darker longitudinal shades; finely black-punctured in rows; on the inner nerve a long, thick, black streak, with a shorter pale one joined to its upper end, and a more or less obscure brown spot within the anterior margin; anterior margin very slightly rounded, clear ochreous, with a brown line on the edge; posterior margin brown or piceous; *Membrane* crenate, especially on the sides, fuscous; nerves pale. *Sternum* black, finely punctured. *Legs* black; *tarsi* piceous.

Abdomen black; beneath smooth, with fine, short, yellow pubescence.

Length, ♂ 2¼, ♀ 2½ lines.

Var.—The average size rather larger, *pronotum* more square, and the punctures stronger; *elytra* rounder on the anterior margin, giving the insect a more oval form; the colour deep chestnut or piceous-black.

This form, first given to us by Mr. E. C. Rye, we at the time accounted a distinct species, which we proposed to call *D. Ryeii*; but as Flor and Fieber hold it to be only a variety, we defer to their opinion. Flor says the pale examples have abbreviated wings, which, however, we do not find to be the case.

In moss, at the roots of grass and under leaves, everywhere, throughout the year; the *var.* not so common.

Species 2.—DRYMUS BRUNNEUS.

RHYPAROCHROMUS BRUNNEUS, *Sahlb.* Geoc. Fen. 57, 6 (1848).
PACHYMERUS — *Bohem.* Vet. Akad. Handl. 248 (1849).
— PALLIDULUS, *H. Schf.* Wanz. ix, 211 (1850).
DRYMUS NOTATUS, *Fieb.* Europ. Hem. 179, 3 (1861).
— BRUNNEUS, *Stål.* Vet. Akad. Förh. 217, 2 (1862).

Oval, convex, black. *Antennæ* piceous; end of the last joint yellowish-brown; *elytra* piceous, with a central pale spot.

Head black, finely punctured. *Antennæ* piceous, with fine, long, projecting hairs; terminal half of the last joint yellowish-brown. *Eyes* black, piceous or red. *Ocelli* black. *Rostrum* brownish-yellow.

Thorax.—Pronotum broad, longer than wide, but little broader behind than in front; sides deeply contracted beyond the middle, side margins piceous; disk, first $\frac{2}{3}$rds black or piceous-black, finely punctured; last 3rd piceous, anteriorly sharply defined and depressed, sometimes as a transverse band, with large, deep, angulated punctures; the callus narrow, smooth. *Scutellum* black, posteriorly piceous, finely punctured. *Elytra; Clavus* pitchy-brown (often in the middle and next the claval suture a pale streak), with 4 rows of punctures, the 2 middle ones being confluent at the base; *Corium;* anterior margin much rounded, at the base ochreous, but throughout with a brown line on the edge; disk pitchy-brown, very convex, somewhat strongly and distantly punctured; the lower 3rd of the inner nerve fuscous-black (the colour spreading outwardly), with a pale streak above it, often expanding outwardly into a pale ochreous spot: *Membrane* fuscous-black; round the sides crenate; base brown, outwardly yellowish, the colour expanding behind the exterior angle into a large spot, and at the inner angle into a small one; nerves whitish, with an interrupted fuscous line down the centre of each; within the anterior margin the ground colour is darker, and being bounded by the 1st nerve, there appears to be a black spot margined with white. *Sternum* black, finely punctured. *Legs; thighs* black, apex piceous, or entirely piceous; *tibiæ* almost nude, piceous-brown; *tarsi* paler.

Abdomen pitchy-black; *Connexivum* piceous. Underside piceous, with fine yellowish pubescence.

Length, 2¾ lines.

Not rare, in moss, under leaves, &c., nearly all the year round.

Species 3.—DRYMUS PILIPES.

DRYMUS PILIPES, *Fieb.* Europ. Hem. 179, 1 (1861).

Elliptic, narrow, slightly shining, black; *elytra* pitchy-brown; *antennæ* pitchy-black; *tarsi* with long hairs.

Head very finely punctured. *Antennæ* pitchy-black, with fine projecting hairs; 1st joint, base of all the others, and apex of the 4th, paler. *Eyes* and *Ocelli* pitchy-black. *Rostrum* reddish-brown.

Thorax.—Pronotum much longer than broad, subquadrangular, the sides being only a little and gradually contracted beyond the middle, and not much widened posteriorly; anterior angles much rounded; lateral and posterior margins piceous; disk, first ⅔rds black, with very fine, shallow, distant punctures; the central depression almost obsolete; last 3rd piceous, with strong, deep, angulated punctures; the callus clear piceous. *Scutellum* rather flat, black, and finely punctured, the transverse depression sometimes slight. *Elytra; Clavus* light pitchy-brown, with 4 rows of large contiguous punctures, the 2 middle rows indistinct; claval suture depressed and darker; *Corium* light pitchy-brown, finely punctured in rows; anterior margin slightly rounded, ochreous-brown, with a brown line on the edge; posterior margin dark piceous; disk with a dark-brown cloud on the 1st nerve posteriorly, the inner nerve on its lower ½ blackish, with a short pale streak above; *Membrane* somewhat abbreviated, fuscous-black, the inner basal angle brownish; nerves dark, with lighter margins. *Sternum* black, shining, finely punctured. *Legs; thighs* pitchy-black, apex piceous; *tibiæ* piceous, with long, projecting hairs; *tarsi* paler.

Abdomen black; beneath shining, with fine yellowish pubescence.

In the ♂, according to Fieber, a streak on the clavus and the basal 3rd of the corium are whitish, and the pale nerves of the latter are margined with rows of brown punctures.

Length, ♀ 2 lines.

Three specimens taken by Mr. E. C. Rye, in the spring, in moss, near Croydon, and two at Mickleham by Dr. Power.

Genus 11.—TROPISTHETUS, *Fieb.*

Sub-elliptic, the sides parallel.

Head 5-sided, short, convex; central lobe prominent. *Antennæ* stout, short, each joint of about the same thickness, and very thin at the base; 1st joint half its length, reaching beyond the end of the face; 2nd and 3rd clavate; 2nd nearly twice as long as the 1st; 3rd ¾ths as long as the 2nd; 4th slightly longer than the 3rd, not so long as the 2nd, fusiform. *Eyes* small, semiglobose. *Ocelli* distant. *Rostrum* reaching to the 2nd pair of coxæ; 2nd joint longest, 4th short.

Thorax.—*Pronotum* subtrapezoidal or campanulate; anterior margin slightly concave, longer than the width of the head across the eyes; anterior angles rounded; sides nearly parallel for the first ⅔rds, then suddenly divergent; lateral margins very narrow; posterior margin concave; disk, first ⅔rds rather convex; last 3rd flatter, within the hinder angles raised into a strong callus. *Scutellum* large, triangular, flattened across the base and centre. *Elytra; Clavus* deflected to the corium; claval suture depressed; *Corium* convex, anterior margin straight; *Membrane* very thin (often abbreviated); with 4 scarcely perceptible nerves, the two outer straight, the two inner curved only at the base. *Sternum; Mesosternum* convex, with a sharp central keel hindwardly depressed, in front strongly arched; *Metasternum* rhomboidal, convex, with a sharp, cruciform keel. *Legs: thighs;* 1st pair greatly incrassated; beneath angulated, and with a shallow channel on the apical half, on the inner side of which is a row of small teeth, and in the ♂ also a strong, broad elevation; *tibiæ;* 1st pair bent, towards the apex widened internally (in the ♂ more than in the ♀), and bidentate at the apex; *tarsi;* 1st joint on the 1st and 2nd pairs not longer than the 2nd and 3rd, in the 3rd pair as long.

Species 1.—TROPISTETHUS HOLOSERICEUS.

PACHYMERUS SABULETI, *Hahn*, Wanz. ii, 120, t. 66, fig. 201 (1834), non *Fall.*

HOLOSERICEUS, *Scholtz*, Arb. u. Veränd. 19, 2 (1845).

PACHYMERUS SPINIGERELLUS, *Bohem.* Vet. Akad. Förh. 57, 11 (1852).
TROPISTETHUS OCHROPTERUS, *Fieb.* Europ. Hem. 184 (1861).
— HOLOSERICEUS, *Stål*, Vet. Akad. Förh. 217, 1 (1862).

Black, dull; clothed above and beneath with fine, yellow, subprominent hairs. *Clavus* and *corium* deep ochreous, the latter posteriorly—and on the sides pitchy-black; *membrane* shining, white, irrorated with dark atoms; the base clear.

Head finely punctured. *Antennæ* black, clothed with subprominent, yellow hairs; base of each joint narrowly white. *Eyes* and *Ocelli* black. *Rostrum* piceous, the junction of the joints yellowish.

Thorax.—Pronotum finely punctured in front; last 3rd with larger and more distinct punctures. *Scutellum* finely punctured, apex ochreous. *Elytra; Clavus* ochreous, with 3 rows of brown punctures, apex darker; *Corium* deep ochreous, with somewhat strong, black or brown punctures in rows; posteriorly and on the anterior and inner margins pitchy-black, on the latter usually as an undefined spot; centre indistinctly of the ground colour; base unclouded; *Membrane* white, irrorated with dark atoms; base clear, at the inner angle ochreous (the texture of the membrane is so thin that the dark colour of the abdomen shows through, and until the membrane is raised its true colour is not seen). *Sternum;* a spot at the outer side of the coxæ yellowish; *coxæ* and *fulcra* rufous; *thighs* piceous, apex rufous; *tibiæ* piceous, the base more or less rufous; *tarsi* pale rufous, last joint piceous.

Abdomen beneath shining, apex rufous.

Length, 1¼ line.

Rare. In sandy places at the roots of grass. Ventnor, May, (*G. Guyon*); Seaton, S. Devon, January (*Dr. Power*).

Genus 12.—RHYPAROCHROMUS, *Curt.*

Elliptic, the sides subparallel.

Head 5-sided, wide, convex; *Crown* short; *Face* triangular, central lobe long, prominent, sharply defined; side lobes shorter, long-pointed. *Antennæ* rather slender; 1st joint strong, reaching ⅓rd of its length beyond the end of the face; 2nd and 3rd slightly clavate, 2nd twice as long as the 1st, 3rd not so long as the 2nd;

4th a little longer than the 3rd, fusiform. *Eyes* moderate, touching the pronotum. *Ocelli* very distant. *Rostrum* strong, reaching to the 2nd pair of coxæ; 1st joint as long as the head; 2nd and 3rd longer, subequal; 4th shorter than the 1st.

Thorax.—*Pronotum* long, subtrapezoidal, campanulate, or subquadrangular, in front wider than the head across the eyes; anterior angles squarely rounded; sides constricted beyond the middle; side margins very narrow; hinder angles prominent, rounded; posterior margin usually not much longer than the anterior, concave; disk, first $\frac{2}{3}$rds convex, last 3rd flatter, raised within the hinder angles into a callus. *Scutellum* large, long, triangular, deflected posteriorly. *Elytra; Clavus* flat; claval suture depressed; *Corium* flat, convex posteriorly; *Membrane* with 5 nerves; the 1st short, 2nd and 3rd slightly curved at the base, 4th and 5th bisinuate at the base. *Sternum; Mesosternum* in front, with a short keel ending abruptly in a point; hindwardly with a depression extending into the short xyphus; *Metasternum* with a short, sharp keel. *Legs* strong; *thighs*; 1st pair greatly incrassated, flattened beneath, with one large tooth beyond the middle, and two or three small ones between it and the apex; *tibiæ;* 1st pair bent at the base, thickened gradually to the apex, widened internally, and with a strong channel on the sides extending to the apex; *tarsi* strong, 1st joint longer than the 2nd and 3rd, on the 3rd pair twice as long.

Abdomen.—2nd segment beneath, prominent in the middle.

Species 1.—RHYPAROCHROMUS PILICORNIS.

PACHYMERUS PILICORNIS, *Muls.* An. Soc. Lin. 99 (1852).

Black. *Antennæ* with long, projecting hairs; 1st joint piceous. *Pronotum* long, subtrapezoidal. *Corium* piceous, outwardly paler; *membrane* piceous, with lighter shades; nerves interruptedly pale.

Head finely punctured; *Face;* apex of the central lobe rufous. *Antennæ* black, clothed with long projecting hairs; 1st joint and lower part of the 2nd piceous. *Eyes* and *Ocelli* black. *Rostrum* yellowish.

Thorax.—*Pronotum* very long, considerably widened posteriorly, so that the form is subtrapezoidal; anterior portion finely, closely

punctured; posterior portion with strong, distant punctures; side margins and the callus piceous. *Scutellum* depressed in the centre; punctures distant, fine at the base, strong at the sides. *Elytra; Clavus* piceous, with 4 rows of moderate punctures, the two middle rows confluent; *Corium* piceous, outwardly paler, with moderate punctures, finer on the posterior portion; nerves strong and raised at the base, the 1st and the anterior margin pale piceous; *Membrane* fuscous, with lighter shades, and a pale or yellowish spot at the outer and inner basal angles; nerves interruptedly pale. *Sternum* with distant punctures; posterior margin of the *Metasternum* rufous. *Legs* yellow-brown; lower portion of the *thighs*, inner side of the *tibiæ*, and last joint of the *tarsi*, piceous; the *tibiæ* with fine, long hairs.

Abdomen beneath smooth, apex rufous.

Length, $2\frac{3}{4}$ lines.

Rare. Two specimens taken by Mr. E. C. Rye, of which the locality is not recorded.

Species 2.—RHYPAROCHROMUS CHIRAGRA.

LYGÆUS CHIRAGRA, *Fab.* E. S. iv, 168, 113 (1794); S. R. 223, 144 (1803); *Fall.* Hem. Suec. 58, 16 (1829); *Zett.* Ins. Lap. 263, 10 (1840).

PACHYMERUS CHIRAGRA, *Schill.* Beitr. i, 75, 16, t. 6, fig. 9 (1829); *Hahn,* Wanz. i, 56, t. 9, fig. 34 (1831); *Burm.* Handb. ii, 294, 2 (1835); *H. Schf.* Nom. Ent. i, 45 (1835); *Panz.* F. G. 122, 8; *Kolen.* Mel. Ent. ii, 82, 15 (1845).

— TIBIALIS, *Hahn,* Wanz. i, 23, t. 4, fig. 14 (1831).

RHYPAROCHROMUS CHIRAGRA, *Sahlb.* Geoc. Fen. 63, 15 (1848).

PACHYMERUS (PACHYMERUS) CHIRAGRA, *Flor,* Rhyn. Liv. i, 254, 14 (1860).

MEGALONOTUS CHIRAGRA, *Fieb.* Europ. Hem. 182, 7 (1861); *Stål,* Vet. Akad. Förh. 216, 1 (1862).

Black, dull, or slightly shining, clothed with long, appressed, yellow hairs; the sides with long projecting hairs. *Pronotum* long, subquadrangular. *Corium* light brown, with a broad black band on the posterior margin, in which are 2 distinct ochreous spots. *Thighs* black; *tibiæ* red-brown.

Head finely punctured; sides of the central lobe with strong, pro-

minent hairs. *Antennæ* black, the extreme base of all the joints yellowish; 1st joint red at the apex; 2nd, except the apex, red, the base sometimes black; 3rd sometimes red on the lower half; all the joints with long, projecting, black hairs, except on the red part of the 2nd, where they are red. *Eyes* and *Ocelli* black. *Rostrum* piceous.

Thorax.—Pronotum long, subquadrangular, slightly contracted beyond the middle; with long, distant punctures, except on the first 3rd of the disk, where they are fine. *Scutellum* with large, deep punctures, which, on the sides, are somewhat in rows, finer on the middle. *Elytra; Clavus* pale brown, with 3 rows of deep black punctures; *Corium* pale brown, with black punctures in rows, deep at the base, gradually finer posteriorly; next the posterior margin a broad, inwardly indented black band, in which are 2 distinct ochreous spots; often the band stretches up alongside the *clavus*, and forms a stellate blotch; posterior margin black, except at the apex, which is ochreous; *Membrane* (generally abbreviated) fuscous, with a whitish spot at the outer and inner basal angles; nerves obscurely whitish. *Sternum* punctured, and with fine whitish pubescence; the punctures on the *Prosternum* large and deep, on the *Meso-* and *Metasternum* finer and crenate. *Legs* with long projecting hairs; *thighs* black, base and apex red; *tibiæ* red, apex generally piceous (sometimes the 2nd and 3rd pairs entirely piceous), with strong, distant, black spines; the 1st pair spined on the underside only; *tarsi* red, last joint piceous, or entirely piceous.

Abdomen, beneath with longish, appressed, yellow pubescence.

Length, 1¾—2½ lines.

Varies greatly in size and in the marking of the *corium:*

A common species under leaves and at the roots of grass, in dry and sandy places, throughout the year.

Species 3.—RHYPAROCHROMUS DILATATUS.

PACHYMERUS DILATATUS, *H. Schf.* Wanz. vi, 33, t. 192, fig. 591 (1842).
— OBSCURUS, *Muls.* An. Soc. Lin. 97 (1852).
MEGALONOTUS DILATATUS, *Fieb.* Europ. Hem. 182, 6 (1861).

Black, slightly shining, broad, thickly clothed, above and beneath, with longish, appressed, yellow hairs. *Pronotum* short, campanulate. Anterior margin of the *corium* and the claval suture

piceous; the junction of all the joints of the *antennæ* and *tarsi* yellowish.

Head finely punctured. *Antennæ* with long projecting hairs. *Eyes* and *Ocelli* black. *Rostrum* piceous.

Thorax.—Pronotum short, campanulate, widened posteriorly; anterior portion somewhat finely, not closely, punctured; posterior portion with large, long, deep punctures. *Scutellum;* base in the middle flattened and finely punctured, the rest with large, deep, distant punctures. *Elytra; Clavus* with 3 rows of deep punctures; apex rufo-piceous; nerve and claval suture pale piceous; *Corium;* anterior margin piceous, disk with large punctures at the base and along the claval suture; on the centre and posteriorly fine punctures; nerves at the base pale brown-yellow; *Membrane* fuscous, the middle of the base black; interior basal angle fulvous; exterior basal angle with a white spot, one on the 2nd nerve beyond the base, and a larger one on the 3rd nerve (which, however, is often entirely white, with a large whitish spot at or near its extremity); 4th nerve white from the base for nearly ½ its length. *Sternum* with large, round, distant punctures. *Legs; thighs* with fine, appressed, yellowish hairs; *fulcra* and apex yellowish; *tibiæ* with longish, subprominent, yellowish hairs; 2nd and 3rd pairs with fine, distant black spines on the inner side; *tarsi* black, with strong rufous hairs beneath.

Abdomen beneath delicately punctured; the hairs lie perceptibly parallel to each other.

Length, 2½—3 lines.

Common under moss and among débris at Weybridge, in August and September; Addington Hills, August; Stoneham, Hants, May.

Species 4.—Rhyparochromus prætextatus.

Pachymerus prætextatus, *H. Schf.* Nom. Ent. i, 45 (1835); Wanz. iv, 12, t. 113, fig. 357 (1839).
Rhyparochromus maculipennis, *Curt.* B. E. xiii, pl. 612 (1836).
Pachymerus femoralis, *Bohem.* Vet. Akad. Handl. 249 (1849).
Megalonotus prætextatus, *Fieb.* Europ. Hem. 181, 3 (1861); *Stål.* Vet. Akad. Förh. 217, 3 (1862).

Black, shining, narrow, sides subparallel. Anterior ½ of the 1st and 2nd joints of the *antennæ* yellow. *Pronotum* long, sub-

quadrangular. *Corium* testaceous, posteriorly with a broad piceous band. *Legs* yellow; fore *thighs* black.

Head strongly punctured, and a deep fovea on the base next the eyes. *Antennæ* with fine projecting hairs; anterior ½ of the 1st and 2nd joints yellow. *Eyes* and *Ocelli* black. *Rostrum* piceous.

Thorax.—Pronotum long, subquadrangular, a little widened posteriorly; anterior portion with strong distant punctures; disk more finely punctured, the last 3rd with very strong, deep, angulated punctures. *Scutellum;* side margins ochreous; base in the middle finely punctured; middle smooth, the rest with strong, deep, angulated punctures. *Elytra; Clavus* testaceous, posteriorly piceous, with 3 rows of long, deep, distant punctures; *Corium* testaceous, posterior 3rd piceous-black; inwardly 2 rows of long, deep, distant punctures, outwardly finer punctured; disk smooth; *Membrane* on the base, along the suture, black; the rest whitish, with a large, undefined lunule; or fuscous, with a large whitish spot, and pale next the base. *Sternum* strongly punctured. *Legs* finely haired; *thighs;* 1st pair black, *fulcra* and apex yellow; 2nd and 3rd pairs yellow, sometimes with a brown spot; *tibiæ* yellow, 2nd and 3rd pairs with a few projecting hairs; *tarsi* yellow; apex of the joints, especially the 3rd, sometimes brown.

Abdomen beneath with fine, short, sparse hairs.

Length, 2—2½ lines.

In sandy places, among grass; local. Deal, May and August; Mousehold Heath, near Norwich (*Curtis*).

Species 5.—RHYPAROCHROMUS ANTENNATUS.

PACHYMERUS ANTENNATUS, *Schill.* Beitr. 76, 18, t. 8, fig. 10 (1829); *Hahn,* Wanz. i, 58, t. 9, fig. 35 (1831); *H. Schf.* Nom. Ent. i, 44 (1835); *Bohem.* Vet. Akad. Förh. 55, 9 (1852).

RHYPAROCHROMUS ANTENNATUS, *Sahlb.* Geoc. Fen. 64, 16 (1848).

PACHYMERUS (PACHYMERUS) ANTENNATUS, *Flor,* Rhyn. Liv. i, 252, 13 (1860).

MEGALONOTUS ANTENNATUS, *Fieb.* Europ. Hemp. 181, 1 (1861); *Stål,* Vet. Akad. Förh. 216, 2 (1862).

Black, shining; upper ½ of the 1st joint of the *antennæ* and the whole of the 2nd yellow; *pronotum* campanulate, widest in front. *Elytra* piceous-black, outwardly piceous. *Legs* yellow.

Head finely punctured. *Antennæ* with close, projecting hairs; 1st joint black on the lower ½, anteriorly yellow; 2nd yellow; 3rd and 4th black. *Eyes* and *Ocelli* black. *Rostrum* yellowish, the end black.

Thorax.—*Pronotum* campanulate, widest and very convex in front; smooth; anterior portion with only a few fine distant punctures; last 3rd with distant, deep, long punctures. *Scutellum* black; apex piceous; base finely punctured; sides with deep large punctures. *Elytra; Clavus* piceous, with 3 rows of large deep punctures; nerves yellowish; *Corium* pitchy black, outwardly piceous, or piceous with indistinct ochreous shades; clothed with fine, short, suberect hairs; on the inner side 2 or 3 rows of strong punctures, the rest of the disk smooth: *Membrane* (in all the English specimens we have seen abbreviated and piceous) "smoke-brown, the inner basal angle with a large white spot" (*Fieber*). *Sternum* with moderate distant punctures. *Legs* yellow; *thighs;* 1st pair piceous beneath; *tarsi;* end of the last joint brown.

Abdomen beneath with fine yellow pubescence.

Length, 2½ lines.

Scarce. Isle of Wight, May (*G. Lewis*).

The following species, referred by Curtis to his genus *Rhyparochromus*, we are unable satisfactorily to identify, and therefore copy his description.

Species 6.—RHYPAROCHROMUS DIMIDIATUS.

RHYPAROCHROMUS DIMIDIATUS, *Curt.* B. E. xiii, 612, 6 (1836).

"Testaceous-ochre, thickly punctured; *antennæ* rather elongated and slender, *head, thorax, scutel,* and *pectus,* piceous, excepting the base of the thorax and margin of the scutel; *membrane* of elytra pale, with the edges and a spot on the middle fuscous.

"Length, 2½ lines.

"August 16th, on rushes, Blackgang Chine, Isle of Wight."

Genus 13.—HYPNOPHILUS.*

Narrow; the sides parallel.

Head 5-sided; *Face* long, triangular; side lobes short, triangular, acute. *Antennæ* slender, of moderate length; 1st joint rather the stoutest, the apex reaches a little beyond the end of the face; 2nd and 3rd slightly clavate, 2nd twice as long as the 1st; 3rd and 4th each shorter than the 2nd, in length subequal; 4th fusiform. *Eyes* semi-globose prominent. *Ocelli* very small, distant. *Rostrum* thin, reaching to the 2nd or 3rd pair of coxæ; 1st joint as long as the head, 2nd longest.

Thorax.—Pronotum subquadrangular, at least as wide as the head across the eyes; anterior angles rounded; sides nearly straight, a little constricted at about ¾ths of the length; side margins narrow; posterior angles rather prominent, slightly rounded; posterior margin concave; disk anteriorly convex for about ¾ths of the length, the rest flat, only a little thickened within the hinder angles. *Scutellum* large, triangular, slightly convex. *Elytra; Clavus* and *Corium* flat; *Corium* ½ the length of the abdomen; anterior margin straight; apex rounded; *Membrane* rudimentary in English examples (according to Fieber and Flor, it is sometimes developed, and has 4 nerves). *Sternum; Metasternum* in front prominent, with a sharp keel; xyphus short or pointed. *Legs; thighs* fusiform; 1st pair incrassated, flattened beneath on the apical ½, unarmed; *tibiæ*, 1st pair widened on the inner side to the apex; *tarsi;* 3rd joint on the 1st and 2nd pair as long as the 1st and 2nd together, on the 3rd pair much longer.

Abdomen very convex beneath; *Connexivum* deep, almost vertical.

Species 1.—HYPNOPHILUS MICROPTERUS.

RHYPAROCHROMUS MICROPTERUS, *Curt.* B. E. xiii, 612, 2 (1836).
PACHYMERUS HIRSUTULUS, *Scholtz*, Arb. u. Veränd, 29 (1847).
— GRACILIS, *Bohem.* Vet. Akad. Förh. 54, 6 (1852).
— (PACHYMERUS) HEMIPTERUS, *Flor*, Rhyn. Liv. i, 261, 18 (1860).
MACRODEMA HIRSUTULA, *Fieb.* Europ. Hem. 180 & 388 (1861).

* Ὕπνος, a moss, and φιλὸς, a lover.

Black, shining; posterior portion of the *pronotum*, the *clavus*, and *corium*, dull ochreous; *legs* black.

Head convex, finely punctured, with a few long, erect, black hairs on the orbit of the eyes and the sides of the central lobe. *Antennæ* black, with fine, short, subappressed hairs; base of each joint narrowly red; sometimes the middle of the 2nd broadly rufous. *Eyes* small, a little removed from the pronotum. *Rostrum* piceous.

Thorax.—Pronotum finely, distantly punctured, finest on the disk, which is also finely crenate in front; anterior portion very convex, and its junction with the posterior 4th sharply defined; last 4th (except at the sides) more or less clearly ochreous, with black round punctures. *Scutellum* finely punctured; apex ochreous. *Elytra; Clavus* and *Corium* flat, pale dull ochreous; *Corium* more or less clouded posteriorly, and ordinarily with 2 undefined, brown or piceous spots, one on the first 3rd near the claval suture, the other posterior on the anterior margin; anterior margin narrowly reflexed, mostly clear, with a brown line on the edge; both *Clavus* and *Corium* with distinct rows of round black punctures, larger than on the pronotum; *Membrane* appears only as a whitish border to the corium. *Sternum* finely punctured, more strongly on the anterior portion of the *Prosternum; Metasternum* finely crenate, posterior margin rufous. *Legs* with fine yellowish hairs; *coxæ, fulcra*, and base and end of the *thighs*, rufous; *tibiæ* black or piceous; base rufous; beneath with fine spines in a row; *tarsi* black or piceous.

Abdomen beyond the corium uncovered, finely punctured; underside finely punctured, and clothed with short, straight, yellowish pubescence, and on the posterior margin of the last abdominal segment 2 or 3 projecting black hairs.

Length, $1\frac{1}{2}$ line.

Local. In moss among heath, from April to October. Coombe Wood, Surrey; Addington Hills; Plumstead Common; Weybridge; Tunbridge Wells; Heron Court, Hants (*Curtis*).

Species 2.—Hypnophilus hemipterus.

Pachymerus hemipterus, *Schill.* Beitr. 77, 20, t. 6, fig. 11 (1829).
— Staphyliniformis, *Hahn*, Wanz. i, 61, t. 9, fig. 37 (1831).
— pallidipennis, *H. Schf.* Wanz. ix, 210 (1850).
— angustulus, *Bohem.* Vet. Akad. Förh. 56, 10 (1852).

PACHYMERUS (PACHYMERUS) OCULATUS, *Flor*, Rhyn. Liv. i, 257, 16 (1860).

ISCHNOCORIS PALLIDIPENNIS, *Fieb.* Europ. Hem. 180, 2 (1861).

PTEROTMETUS HEMIPTERUS, *Stål*, Vet. Akad. Förh. 215, 2 (1862).

Black, slightly shining; apical portion of the 1st and 2nd joints of the *antennæ* yellow; posterior 4th of the *pronotum*, and the *clavus* and *corium*, dull ochreous; *legs* fulvous; fore *thighs* black.

Head slightly convex, delicately punctured; a few erect black hairs on the orbit of the eyes and the sides of the central lobe. *Antennæ* black, with close, short, subappressed, yellowish hairs; 1st joint on the base and apical 3rd, 2nd on the apical ½, reddish-yellow. *Eyes* large, almost touching the pronotum, black. *Ocelli* black. *Rostrum* reaching the 2nd pair of coxæ, piceous.

Thorax.—Pronotum; anterior portion slightly convex, finely punctured; posterior portion flatter, pale ochreous; at the sides the punctures black, round, distant, larger than in front; posterior margins black, often with 2 short, whitish streaks in the middle; the junction of the anterior and posterior portions of the disk not sharply defined. *Scutellum* black, delicately punctured; apex ochreous. *Elytra; Clavus* and *Corium* pale ochreous; *Clavus* with 2 rows and *Corium* with 4 rows of black punctures, which latter in the 2 outer rows are larger and confluent; anterior margin pale, with a black line on the edge; apex with a black spot; posterior margin black; *Membrane* (rudimentary) pale, with a fuscous shade. *Sternum* with fine scattered punctures; outer margin and a spot at the base of each coxa pale yellow. *Legs; fulcra* fulvous; *thighs;* 1st pair black, fulvous at the base and apex; 2nd and 3rd pairs fulvous, fuscous or black towards the apex; 2nd pair sometimes entirely fulvous; *tibiæ* fulvous, 2nd and 3rd joints sometimes piceous.

Abdomen finely punctured; the underside with short, yellowish pubescence.

Length, 1¼ line.

Local. In moss among heath, from April to December. Coombe Wood, Surrey; Addington Hills; Dartford Heath; Tunbridge Wells.

Genus 14.—PLINTHISUS (*Lat.*); *Fieb.*

Sub-elliptic, depressed.

Head short, narrow, convex, triangular, deeply inserted in the pronotum; *Face;* central lobe short, broad; side lobes short; antenniferous processes very short. *Antennæ* thin; 1st joint short, reaching a little beyond the end of the face; 2nd twice as long as the 1st, clavate; 3rd and 4th each not so long as the 2nd, fusiform. *Eyes* small but prominent, touching the pronotum. *Ocelli* very distant, placed close to the eyes. *Rostrum* slender, reaching the 2nd pair of coxæ; 2nd joint longest.

Thorax.—Pronotum long, subquadrangular, in front wider than the head across the eyes; anterior margin very concave; anterior angles subacute, greatly depressed; sides more or less constricted beyond the middle; side margins narrow, reflexed; hinder angles prominent, right-angled, obtuse; posterior margin slightly concave; disk slightly convex, flatter behind, in front somewhat raised in the middle and depressed on each side. *Scutellum* large, triangular. *Elytra; Corium* long, slightly convex; anterior margin narrow, reflexed; *Membrane* thin, with 4 slightly curved nerves. *Sternum; Mesosternum* in front sharp-keeled, hindwardly convex, the point of the xyphus depressed; *Metasternum* subcordate, in front carinate, hindwardly long-pointed, depressed. *Legs: thighs;* 1st pair very broad, fusiform; beneath flattened on the anterior half, the sides very finely dentate, two of the teeth being larger than the others; *tibiæ;* 1st pair curved, widened on the inside towards the apex, where are 2 short spines; 2nd and 3rd pairs with 2 rows of fine, short spines; *tarsi;* 3rd pair, 1st joint longer than the 2nd and 3rd.

Species 1.—PLINTHISUS BREVIPENNIS.

LYGÆUS BREVIPENNIS, *Lat.* Gen. iii, 123, (1807).
PACHYMERUS BREVIPENNIS, *Schill.* Beitr. i, 75, 16, t. 6, fig. 10 (1829); *Hahn,* Wanz. i, 59, t. 9, fig. 36 (1831); *H. Schf.* Nom. Ent. i, 45 (1835).
PLINTHISUS BREVIPENNIS, *Fieb.* Europ. Hem. 178, 3 (1861).

Black, shining, delicately punctured, with very fine scattered pubescence.

Head with long projecting hairs on the orbit of the eyes and towards the brown apex of the central lobe. *Antennæ* piceous, ends of the joints whitish. *Eyes* piceous. *Ocelli* black. *Rostrum* pitchy-yellow.

Thorax.—Pronotum as broad in front as behind; sides nearly straight; disk rather convex, delicately punctured, the punctures larger posteriorly; posterior margin piceous. *Scutellum* finely crenate-punctate; base sometimes with a slight keel. *Elytra* flat; *Clavus* and *Corium* on the same plane; *Clavus* (sometimes piceous) with 3 rows of long punctures; *Corium;* anterior and posterior margins piceous; inner margin and the basal ½ of the anterior margin with long punctures in rows; disk with fine, distant punctures; nerves not raised; *Membrane* appears merely as a piceous border to the corium. *Sternum* finely crenate, punctured in the middle. *Legs; thighs* pitchy-black, ends pale piceous; finely pubescent; *tibiæ* pale piceous, pubescent, the hairs longer on the 2nd and 3rd pairs; *tarsi* pale piceous, 1st joint generally darker.

Abdomen above with fine, short, distant pubescence; beneath with longer yellowish hairs.

Length, 1¼—1½ line.

Not rare in sandy places, under moss, &c. Deal, May and August; Dartford Heath, August; Southend, September; Ventnor (*G. Guyon*).

Species 2.—PLINTHISUS BIDENTULUS.

PACHYMERUS BIDENTULUS, *H. Schf.* Wanz. vi, 31, t. 191, fig. 588 (1842).
PLINTHISUS — *Fieb.* Europ. Hem. 178, 2 (1861).

Black, shining, the *clavus* and greater part of the *corium* bright piceous.

Head delicately punctured, with very fine short pubescence, and 2 or 3 long hairs on the orbit of the eyes and towards the apex of the central lobe. *Antennæ* piceous, apex of the joints whitish. *Eyes* piceous. *Ocelli* black. *Rostrum* pale piceous.

Thorax.—Pronotum narrower in front than behind; sides slightly constricted beyond the middle; disk very slightly convex, delicately

punctured, the punctures of the posterior 4th larger, long and distinct; towards the anterior angles finely pubescent; hinder angles and posterior margin sometimes piceous. *Scutellum* delicately crenate-punctate. *Elytra; Clavus* pale piceous, black on the inner margin, with 3 irregular rows of long, deep punctures; the nerve next the claval suture strong; claval suture depressed, pale piceous; *Corium* piceous, paler in the middle, with fine distant punctures, stronger and in rows on the anterior and inner margins; nerves, especially the 1st at the base, strong and raised; posterior margin and membrane-suture piceous on the outer half; *Membrane* yellowish, nerves darker. *Sternum* delicately crenate-punctate in the middle. *Legs* with fine short pubescence; *thighs* black, apex piceous; *tibiæ* pale piceous; *tarsi* paler.

Length, 1¼—1½ line.

Rare. Under moss, with *P. brevipennis*, at Dartford Heath, in August and September.

Genus 15.—STYGNOCORIS.*

(STYGNUS, *Fieb.*)†

Short, oval, convex.

Head short, 5-sided, broader than long, very convex; *Face* vertical; central lobe short, obtuse, arched in a line with the crown; side lobes as long as the central lobe, base broad, sides concave, apex pointed. *Antennæ* stout; 1st and 4th joints thickest; 1st reaching by ½ its length beyond the end of the face; 2nd 2 to 2½ times longer than the 1st; 3rd rather shorter than the 2nd; 4th as long as the third, fusiform; 3rd and 4th with a short petiole. *Eyes* large, prominent behind, projecting beyond the anterior angles of the pronotum. *Ocelli* small, distant. *Rostrum* reaching to the middle of the *mesosternum;* base in a deep furrow, of which the sides are raised and rounded.

Thorax.—Pronotum trapezoidal, convex; anterior margin nearly straight, as long as the base of the head exclusive of the eyes; anterior angles greatly deflected; posterior angles prominent, rounded; posterior margin concave in the centre, at each end produced rather

* Στυγνος, obscure, and κορις, bug.

† *Stygnus*, Lap., a genus of *Arachnides*.

broadly and depressed on to the base of the clavus. *Scutellum* large, triangular, convex; basal angles depressed. *Elytra* at the base rather narrower than the base of the pronotum, then widened and rounded; *Clavus* broad; *Corium;* disk posteriorly convex; posterior margin nearly straight, incrassated; *Membrane* with a deep furrow along the base, and 4 strong nerves; 1st short, curved, ending on the anterior margin; 2nd nearly straight; 3rd arising near the inner basal angle, strongly curved towards the inner margin and then from it; 4th arising on the inner margin, short and curved; the last 3 end on the posterior margin. *Sternum; Mesosternum* with a slight central keel; xyphus short; *Metasternum* small, depressed in the centre. *Legs* strong; *thighs;* 1st pair very thick, fusiform; beneath with a wide, shallow channel, on the edges of which, at and before the middle, are several short, scarcely perceptible elevations; 2nd and 3rd pairs not thickened in the centre, contracted a little at the apex; *tibiæ* a little widened at the apex; *tarsi;* 1st joint on the 1st and 2nd pairs as long as the 2nd and 3rd together; on the 3rd pair much longer.

Abdomen above flat, beneath convex; *Connexivum* wide, vertical or recurved over the abdomen.

Species 1.—STYGNOCORIS RUSTICUS.

LYGÆUS RUSTICUS, *Fall.* Mon. Cim. 70, 17 (1807); Hem. Suec. 64, 25 (1829); *Zett.* F. Ins. Lap. i, 470, 3 (1852); Ins. Lap. 262, 4 (1840).
PACHYMERUS RUSTICUS, *Schill.* Beitr. i, 81, 26, t. 7, fig. 5 (1829); *Hahn,* Wanz. i, 223, t. 36, fig. 116 (1831); *Kolen.* Mel. Ent. ii, 83, 53 (1845).
APHANUS — *H. Schf.* Nom. Ent. i, 46 (1835).
BEOSUS — *Sahlb.* Geoc. Fen. 67, 3 (1848).
PACHYMERUS (PACHYMERUS) RUSTICUS, *Flor,* Rhyn. Liv. i, 241, 6 (1861).
STYGNUS RUSTICUS, *Fieb.* Europ. Hem. 186, 1 (1861).
OPHTHALMICUS RUSTICUS, *Stål,* Vet. Akad. Förh. 214, 2 (1862).

Black above and beneath (except the *abdomen*); coarsely and deeply punctured; clothed with fine, yellow, somewhat appressed hairs.

Head.—Antennæ; 1st joint piceous, rarely black; 2nd and 3rd

pale piceous, apex still paler; 4th black, base pale piceous, apex sometimes piceous. *Eyes* piceous. *Ocelli* black. *Rostrum* pale piceous.

Thorax.—Pronotum; sides slightly concave in the middle. *Elytra; Corium* on the anterior margin, sometimes the *Clavus* inwardly, and usually all the nerves, piceous brown; *Membrane* usually rudimentary and not covering the abdomen, whitish, the base black (when developed it is, according to Flor, "gray-brown or blackish, its base and the nerves yellowish-white; or it is on the greater portion clear, with indistinct gray shades between the nerves"). *Legs* piceous; *tarsi* paler, last joint piceous.

Abdomen above very delicately punctured; 1st 2 segments reddish; *Connexivum* on its inner side, on the 1st 3 segments, red. Underside delicately crenate-punctate.

Length, ♂ 2 lines, ♀ 2½ lines.

Not rare, but local. Lee, August; Beckenham, September; West Cowes, Isle of Wight, September, plentiful on *Pulicaria dysenterica.*

Species 2.—Stygnocoris sabulosus.

Lygæus pedestris, *Fall.* Mon. Cim. 71, 18 (1807); Hem. Suec. 64, 26 (1829); *Zett.* Ins. Lap. 263, 5 (1840), non *Panz.*
Pachymerus sabulosus, *Schill.* Beitr. 81, 25 (1829); *Hahn,* Wanz. i, 224, t. 36, fig. 117 (1831).
Aphanus — Nom. Ent. i, 46 (1835).
Rhyparochromus pubescens, *Curt.* B. E. xiii, 612, 24 (1836).
— sabulosus, *Sahlb.* Geoc. Fen. 58, 7 (1848).
Pachymerus (Pachymerus) sabulosus, *Flor,* Rhyn. Liv. i, 243, 7 (1860).
Stygnus sabulosus, *Fieb.* Europ. Hem. 187, 2 (1861).
Ophthalmicus sabulosus, *Stål,* Vet. Akad. Förh. 215, 4 (1862).

Black (except the *pronotum* posteriorly and the *elytra*), shining; coarsely and deeply punctured, except on the *abdomen;* clothed with fine yellow hairs, longer above than beneath. *Corium* yellow-brown, posteriorly piceous.

Head.—The punctures finer than on the pronotum. *Antennæ;* 1st 3 joints brownish-yellow; 4th pitchy-black. *Eyes* and *Ocelli* piceous. *Rostrum* yellow-brown.

Thorax.—Pronotum; sides a little rounded; disk anteriorly black or piceous, posteriorly, including the hinder angles, more or less

brown. *Scutellum* depressed in the centre. *Elytra; Clavus* and *Corium* yellow-brown; the latter, inwardly and posteriorly with a long blackish line, outwardly and posteriorly with a large piceous spot intersected by the 1st nerve; or the posterior half is entirely piceous, with clearer, long spots; *Membrane* more or less fuscous, base and nerves broadly white. *Sternum; Legs* yellow-brown; *tarsi;* last joint piceous.

Abdomen above delicately crenate-punctate; base and sides red. Underside delicately crenate-punctate.

Length, 1—1½ line.

Not rare in dry and sandy places, under heath and grasses. Addington Hills, Surrey, August; Southend, Dartford Brent, and Weybridge, September.

Species 3.—STYGNOCORIS ARENARIUS.

PACHYMERUS ARENARIUS, *Hahn*, Wanz. i, 43, t. 7, fig. 27 (1831).
RHYPAROCHROMUS OBTUSUS, *Curt.* B. E. xiii, 612, 23 (1836).
— ARENARIUS, *Sahlb.* Geoc. Fen. 59, 8 (1848).
STYGNUS ARENARIUS, *Fieb.* Europ. Hem. 187, 3 (1861).
OPHTHALMICUS ARENARIUS, *Stål*, Vet. Akad. Förh. 215, 3 (1862).

Black (except the *elytra*), clothed with short yellow hairs; strongly and deeply punctured. *Corium* brown, with ochreous spots.

Head.—Antennæ; 1st and 4th joints piceous; 2nd and 3rd red-brown; 2nd sometimes more or less piceous. *Eyes* and *Ocelli* black. *Rostrum* yellow-brown.

Thorax.—Pronotum hindwardly piceous, hinder angles brown. *Elytra; Clavus* and *Corium* brown, the latter hindwardly, a line on the posterior half of the inner margin near the claval suture, and the posterior margin, except at the inner angle, piceous; disk also with several ochreous, long spots, of which 3 in a line down the centre are more conspicuous; *Membrane* fuscous-brown; a long, narrow, piceous blotch joined to the middle of the posterior margin of the corium; the rest of the base white, expanding into a large spot at the inner angle; nerves broadly white. *Legs; Coxæ* yellow-brown; *thighs* black, apex yellow-brown; *tibiæ* yellow-brown or piceous, apex lighter; *tarsi* yellow-brown, last joint (sometimes also the 2nd and 3rd) piceous.

Abdomen above and beneath delicately punctured; base on the upper side red.

Length, 1—1½ line.

Common at the roots of plants, especially on heaths, throughout the year.

Genus 16.—Acompus, *Fieb.*

Elliptic.

Head short, broader than long, convex; *Face* vertical, very short, triangular; sides concave; antenniferous processes very short. *Antennæ* slender; 1st joint stoutest, short, about ½ its length reaching beyond the end of the face; 2nd and 3rd of equal thickness, each a very little thicker at the apex; 2nd twice the length of the 1st; 3rd shorter than the 2nd; 4th thicker than the 3rd, as long as the 2nd, fusiform. *Eyes* large, prominent behind. *Ocelli* small, distant. *Rostrum* reaching almost across the mesosternum; base in a short, deep channel, of which the sides are raised and prominent in front.

Thorax.—Pronotum trapezoidal, rather convex, flatter behind, contracted in front to the width of the base of the head exclusive of the eyes; anterior margin nearly straight, anterior angles greatly deflected; sides slightly sinuate, being a little constricted in the middle; hinder angles prominent, rounded; posterior margin rather concave. *Scutellum* triangular; the base deflected towards the centre, which is depressed transversely. *Elytra; Clavus* deflected to the *Corium; Corium;* base flat; posteriorly convex; anterior margin slightly curved, thick, reflexed to beyond the middle; central nerve strong, raised for ⅔rds of its length. *Membrane;* base depressed; of the 4* nerves the 1st 2 are slightly curved outwards to the posterior margin; the 3rd and 4th arise near together at the inner basal angle, then diverging gradually and sinuate to the posterior margin; the first 3 are stronger than the 4th. Often the membrane is only rudimentary. *Sternum; Mesosternum* flat, with a short keel in front; xyphus short; *Metasternum* convex, with a central keel, hindwardly pointed. *Legs: thighs;* 1st pair stoutest, fusiform, unarmed; 2nd and 3rd pairs gradually thicker from the base, but contracted at the apex; *tarsi;* 1st joint on the

* Fieber says 5.

1st and 2nd pairs as long as the other 2, on the 3rd pair much longer.

Abdomen above flat, beneath convex; *Connexivum* moderate, vertical.

Species 1.—Acompus rufipes.

Lygæus rufipes, *Wolff*, Ic. Cim. 121, fig. 145 (1800).
Ophthalmicus Loniceræ, *Schill.* Beitr. 63, 3, t. 2, fig. 3 (1829).
Pachymerus (Aphanus) pallipes, *H. Schf.* Panz. F. G. 121, 2.
— dubius, *Ramb.* F. And. 152, 11 (1838).
Beosus clavatus, *Sahlb.* Geoc. Fen. 67, 4 (1848).
Pachymerus bisignatus, *Bohem.* Vet. Akad. Handl. 104 (1859).
— (Pachymerus) clavatus, *Flor*, Rhyn. Liv. i, 244, 8 (1860).
Acompus rufipes, *Fieb.* Europ. Hem. 186 (1861).
Ophthalmicus rufipes, *Stål*, Vet. Akad. Förh. 214 (1862).

Black, shining, coarsely and deeply punctured, except on the *abdomen;* finely haired, except on the *pronotum* and *clytra; corium* ochreous, hindwardly piceous; *legs* and 2nd and 3rd joints of the *antennæ* orange.

Head above and beneath with the hairs longish and waved. *Antennæ* with short whitish hairs; 1st joint black, apex orange; 2nd and 3rd orange, 4th piceous or black. *Eyes* and *Ocelli* black. *Rostrum* piceous.

Thorax.—Pronotum; hinder angles smooth. *Elytra; Clavus* and *Corium* ochreous, mixed with brown shades, and with rows of black-brown punctures; *Corium* posteriorly with a broad, indented band, in which are usually 2 or 3 ochreous spots; posterior margin punctured; *Membrane* delicately crenate, fuscous; base with a large brown spot in the middle conjoined to the *Corium;* basal angles broadly, inner margin and nerves, white. *Sternum; Prosternum* entirely, *Meso-* and *Metasternum* at the sides, clothed with longish, fine, appressed, white hairs. *Legs* orange; *thighs;* sometimes either the 1st pair only, or all three, black, except at the apex; *tarsi;* last joint piceous.

Abdomen above finely shagreened; beneath finely punctured, clothed with fine, short, appressed yellow hairs, longer on the 6th and genital segments.

Length, 2—2½ lines.

Rare. Southend, September; Wicken Fen, among old sedge, May (*Dr. Power*).

Genus 17.—ISCHNODEMUS, *Fieb.*

Narrow, linear.

Head 5-sided, short, not so wide as the pronotum, narrower behind the eyes; *Crown* almost flat between the eyes, posteriorly convex; *Face* short; central lobe wide and prominent; side lobes shorter, pointed. *Antennæ* placed on a short, truncate process before and below the eyes; 1st joint very short, thick, reaching rather beyond the end of the face; base petiolated, inner side rounded, apex truncate; 2nd and 3rd more slender, each gradually thicker from base to apex; 2nd 3 times as long as the 1st; 3rd $\frac{2}{3}$rds as long as the 2nd; 4th as long as the 2nd, and as thick as, or thicker than, the 1st, fusiform. *Eyes* rather large, oval, prominent behind. *Ocelli* small, distant. *Rostrum* reaching to the middle of the *mesosternum*; length of the joints subequal; 1st $\frac{1}{2}$ as long as the head.

Thorax.—*Pronotum* trapezoidal, flat; anterior angles much rounded and narrowed, anterior margin incrassated; sides not margined, but rounded off; hinder angles squarely rounded; posterior margin very concave.* *Scutellum* large, triangular, posteriorly somewhat depressed on each side. *Elytra* (when developed*) shorter than the abdomen; *Corium;* anterior margin straight; *Membrane* with 5† straight nerves arising at the base. *Sternum; Coxæ* deeply sunk in the segments; *Prosternum* with a slight ridge; *Meso-* and *Metasternum* with a deep rostral channel; xyphus of the former long, triangular, of the latter short. *Legs* short, strong; *thighs* thick, fusiform, unarmed; *tarsi;* 1st joint on the 1st and 2nd pairs not so long as the 3rd; on the 3rd pair subequal; 2nd joint very short and thin; 3rd stout, widened to the apex; *Claws* divergent, short, very much curved.

Abdomen above flat; *Connexivum* equally deep throughout, almost vertical. Underside convex; 1st 4 segments with the posterior margin straight; 5th short in the middle; 6th long, cleft

* The development of the elytra and wings is exceptional; the insects usually appear with rudiments of the elytra only.

† Fieber says 4 ('Europ. Hem.,' p. 44).

in the centre, the sides of the opening divergent and rounded. *Genital segments;* the 1st, short, lies in the angular opening of the last abdominal segment, resting on the 3rd genital segment, which is large, round, convex, and deeply cleft in the centre; the 2nd segment appears as a short and triangular plate at each side of the 3rd.

Species 1.—ISCHNODEMUS SABULETI.*

LYGÆUS SABULETI, *Fall.* Hem. Suec. 62, 23 (1829).
ISCHNODEMUS QUADRATUS, *Fieb.* Weit. Beitr. 338, 15, t. 2, fig. 11 (1836).
PACHYMERUS DECURTATUS, *H. Schf.* Wanz. iv, 10, t. 113, fig. 355 (1839).
— PARALLELUS, *Costa,* Ann. Soc. Ent. France, x, 290, pl. 6, fig. 5 (1841).
MICROPUS SABULETI, *Sign.* Ann. Soc. Ent. France, 3me sér. v · 29, 8, pl. 2, fig. 7, 8 (1857).
ISCHNODEMUS SABULETI, *Fieb.* Europ. Hem. 163, 2 (1861); *Stål,* K. Vet. Akad. Förh. 212, I (1862).

Black, dull, clothed with very fine, short, whitish hairs.

Head very minutely punctured. *Antennæ* black, with short whitish hairs; apex of the 2nd and 3rd and base of the 3rd and 4th joints narrowly yellow. *Rostrum* yellow-brown, last joint piceous.

Thorax.—Pronotum very short, nearly as broad as long, very finely punctured, the hairs at the sides very fine, longish, and appressed; posterior margin with a dull ochreous line, narrow in the centre and wider at the ends. *Scutellum* strongly punctured at the sides. *Elytra; Clavus* whitish, posterior margin and apex piceous; the nerve brown, punctured; *Corium* whitish, slightly shining; anterior margin dull ochreous; posterior margin broadly piceous, except the apex; disk clear, nerves brown or piceous, punctured. (In undeveloped examples the *Corium* is abbreviated, and rounded posteriorly, the *Membrane* being represented by a narrow whitish border.) *Membrane* slightly shining, opaque, fuscous-brown, with darker nerves; base clear whitish, except on the 2nd and 3rd nerves, where a piceous spot reaches over from the posterior margin

* In the 'Oefvers af K. Vet. Akad. Förh.,' 1862, Dr. Stål has referred this species to the Family *Blissida,* Stål.

of the *Corium*. *Sternum; Coxæ* and *legs* orange-yellow; *thighs* pitchy-black in the middle; *tarsi;* last joint piceous.

Abdomen beneath shining, black, with fine, close, whitish hairs.

Length, 2½—3 lines.

Local. On reeds and aquatic plants. Merton, Surrey (*Power*); Folkestone (*G. Lewis*); in August and September.

Family 2.—PHYGADICIDÆ.

Genus 1.—Phygadicus, *Fieb.*

Elliptic.

Head with the eyes broader than the front of the pronotum; *Crown* convex and deflected, sides widened before and under the eyes into a short obtuse process for the insertion of the antennæ; *Face* triangular, greatly deflected in a curve continuous with that of the crown; central lobe short, narrow, obtuse; side lobes as long as the central lobe, wide at the base, compressed towards the pointed end, the outer margin concave. *Antennæ* rather strong; 1st joint short, slightly the stoutest, reaching a little beyond the end of the face; the other 3 of equal thickness; 2nd and 3rd clavate; 2nd more than twice as long as the 1st; 3rd a little shorter than the 2nd; 4th a little shorter than the 3rd, fusiform. *Eyes* large, semiglobose, prominent. *Ocelli* large, distant. *Rostrum* reaching to the centre of the mesosternum; 1st joint not so long as the head; 2nd longer than the 1st, 3rd shorter; the 1st in a deep channel, of which the sides, in front, are raised and rounded to the end of the central lobe of the face.

Thorax.—Pronotum long-trapeziform; anterior margin slightly concave, anterior angles rounded; sides constricted in the middle; margins very narrow; hinder angles rounded; posterior margin concave; disk convex, raised into a callus within the hinder angles. *Scutellum* large, triangular; base convex, centre depressed, apex acute. *Elytra* posteriorly narrowed and lying within the connexivum; *Clavus* outwardly depressed; *Corium;* anterior margin a little curved, posterior margin straight; the nerves on the disk rather strong, 1st and 3rd more or less distinctly forked beyond the middle, forming, when distinct, 2 large cells within the posterior margin; *Membrane* depressed along the base; with 4 nerves, of which the 2

inner ones only arise at the base close together; they then curve a little and form a parallel-sided long cell, of which the end is closed by a cross nerve; thence they are straight; the other 2 arise from a cross nerve which joins the base of the 2nd nerve, and is parallel to, but distant from, the base; the outer one of the two (the 1st) diverges to the anterior margin, the 2nd is straight and parallel to the inner 2. *Sternum* in the centre flat, with a very fine channel on the *Mesosternum;* on the anterior margin of the *Metasternum*, before the coxa, a convoluted, obtuse process projects outwards. *Legs* strong; *thighs* very stout, thickest in the middle, the ends constricted; 1st pair with a strong, short spine beneath; *tarsi* long, on the posterior legs longest; 1st joint on the 3rd pair as long or longer than the other 2.

Abdomen above flat, the posterior margin of the last segment roundly produced; beneath as in *Cymus*, but in the ♀ the 6th segment is longer in the middle, and the posterior margin straight; *Connexivum* moderate, much reflexed. *Genital segments* as in *Cymus*, but in the ♀ the 3rd segment is posteriorly rounded and the central fissure more decided.

Species 1.—PHYGADICUS URTICÆ.

CIMEX URTICÆ, *Fab.* S. E. 723, 129 (1775); *Rossi*, F. E. ii, 1329 (1790).

LYGÆUS URTICÆ, *Fab.* E. S. iv, 166, 106 (1794); S. R. 231, 136 (1803); *Fall.* Mon. Cim. 63, 2 (1807); Hem. Suec. 49, 2 (1829); *Zett.* Faun. Ins. Lap. i, 469, 1 (1832); Ins. Lap. 262, 1 (1840).

HETEROGASTER URTICÆ, *Schill.* Beitr. i, 84, 1, t. 7, fig. 8 (1829); *Hahn*, Wanz. i, 73, t. 11, fig. 43 (1831); *H. Schf.* Nom. Ent. i, 46 (1835); *Burm.* Handb. ii, 293, 1 (1835); *Curt.* B. E. xiii, 597, 3 (1836); *Sahlb.* Geoc. Fen. 52, 1 (1848).

PHYGADICUS — *Flor*, Rhyn. Liv. i, 302, 1 (1860); *Fieb.* Europ. Hem. 202, 4 (1861); *Stål*, Vet. Akad. Förh. 223, 1 (1862).

Black, with fine light hairs; *pronotum*, lateral and posterior margins and a posterior bidentate spot, *scutellum* apex, *clavus* and *corium*, ochreous; the latter with 3 black spots; *tibiæ* yellow, with 3 black rings; *connexivum* with yellow spots.

Head thickly and finely punctured, black, with long, light, projecting hairs. *Antennæ;* 1st joint black, apex piceous; the other 3 joints piceous, the ends paler. *Eyes* black. *Ocelli* reddish. *Rostrum* piceous. Underside black, strongly punctured.

Thorax.—Pronotum rather finely punctured, black, with fine prominent hairs; anterior margin narrowly ochreous; lateral margins and posterior callus ochreous; disk posteriorly more or less tinged with ochreous, sometimes in a bidentate form. *Scutellum* black; apex whitish; disk finely, the sides strongly, punctured. *Elytra; Clavus* ochreous, punctured in rows; apex broadly pitchy-black; *Corium* distinctly, rather finely punctured, shining, ochreous, with short hairs; anterior margin clear, with a brown line on the edge; posterior margin (except in the centre) strongly black-punctured; on the 1st nerve of the disk 2 longish, broad, black streaks, and on the 3rd 2 smaller ones, one in the centre, the other at the posterior margin; *Membrane* diaphanous; near the base, exterior to the 3rd nerve, a large black spot; between the nerves a transverse row of faint, much suffused, fuscous spots. *Sternum* black; sides with short hairs. *Legs* with long, projecting hairs; *Coxæ* ochreous; *thighs* black; apex and spots on the edges ochreous; basal 3rd of the 2nd and 3rd pairs ochreous; *tibiæ* yellow, with 3 broad pitchy-black rings, 1st close to the base, 2nd in the middle, 3rd before the apex; *tarsi* yellow; 1st joint narrowly pitchy-black at the base and apex, and the 3rd at the apex on the upper side.

Abdomen above black; *Connexivum* black, with a large subquadrate yellow spot on each segment. Underside shining, black (the centre beyond the first 2 segments more or less ochreous), finely punctured, with fine, short, whitish hairs. *Genital segments* with long, prominent hairs.

Length, 2½—3 lines.

Not rare in dry or sandy places, under thistles, nettles, and other plants. Deal and Charlton, Kent, in August; Brighthampton, Oxon. (*S. Stone*).

Species 2.—Phygadicus Artemisiæ.

Heterogaster Artemisiæ, *Schill.* Beitr. 88, t. 8, fig. 3 (1829).
— Coronillæ, *Kolen.* Mel. Ent. ii, 88, 59, t. 9, fig. 17 (1845).
Phygadicus Artemisiæ, *Fieb.* Europ. Hem. 202, 3 (1861).

Black, slightly shining, densely clothed with appressed yellowish hairs, longer above than beneath; *pronotum* with a posterior transverse band; *clavus* and *corium* yellowish-brown; *thighs* at the end and the *tibiæ* reddish-yellow; the latter with the base and a ring before the apex black.

Head rather roughly punctured; *Face* long, the sides very concave. *Antennæ* black, end of the 1st joint narrowly, middle of the 2nd broadly, red; 3rd and 4th red at the base. *Eyes* brown. *Ocelli* black. *Rostrum* yellowish; the base of the joints darker.

Thorax. — *Pronotum* with strong, deep, distinct punctures; a broad, irregularly defined, and obscured yellowish-brown band within, but not touching the posterior margin; the callus at the hinder angles black inwardly, yellowish outwardly. *Scutellum* strongly punctured, apex yellowish. *Elytra; Clavus* with 3 straight rows of brown punctures; *Corium* with somewhat smaller, distant, brown punctures; a short streak near the clavus, the posterior margin, and 2 long streaks running into it, piceous-black; *Membrane* dusky whitish, clearer in the centre, with 3 fuscous spots in a triangle. *Legs; thighs* black, apex of all, and also a ring near the base of the 2nd and 3rd pairs, reddish-yellow; *tibiæ* reddish-yellow, the base and a subannular spot before the apex black; *tarsi* reddish-yellow, apex of the joints broadly black or piceous.

Length, 2—2½ lines.

A single specimen, captured by Mr. E. C. Rye, by sweeping, near Mickleham, during the summer of 1863.

Fieber says it occurs under *Artemisia*, on species of *Coronilla*, and on grass, in woods recently cut.

Genus 2.—NYSIUS, *Dall.*

(Cat. Hem. ii, 551 (1852.)

Long-oval, with nearly parallel sides.

Head short, broad, across the eyes broader than the front of the pronotum; *Crown* subquadrate, convex, at each side in front curved down vertically, ending in a short, obtuse antenniferous process; *Face* curved in a line with the crown, nearly vertical; central lobe prominent, narrow, obtuse; side lobes shorter than the middle lobe, broad at the base, apex acute, outer margin concave. *Antennæ;* 1st joint stout, reaching a little beyond the end of the face; 2nd and 3rd thin; 2nd twice as long as the 1st; 3rd not quite so long as the 2nd; 4th as long as, and thicker than the 3rd, but not so thick as the 1st. *Eyes* large, semi-globose, prominent beyond the anterior angles of the pronotum. *Ocelli* large, distant. *Rostrum* reaching over the metasternum; basal joint not so long as the head, lying in a channel of which the sides are raised.

Thorax.—Pronotum broad, trapezoidal; on the 1st 3rd a narrow, linear, transverse, smooth incision which does not reach the lateral margins; sides a little constricted in front and at the middle; posterior margin nearly straight; hinder angles obtuse, raised into a callus; disk posteriorly convex. *Scutellum* large, triangular, convex; base in the middle with a deep transverse impression; disk with a strong longitudinal keel. *Elytra; Clavus* deflected to the corium, narrow, without a middle nerve; *Corium;* anterior margin reflexed, except at the base; posterior margin thick, and strongly curved from the end of the clavus to the end of the inner nerve, thence sinuate to the apex; disk slightly convex, almost horizontal next the clavus. *Membrane* with a strong depression along the base, nerves (5) straight; the 3rd, 4th, and 5th connected beyond the base by a cross nerve forming 2 cells. *Sternum; Mesosternum* in the centre with a deep rostral channel; *xyphus* triangular; *Metasternum* convex, hindwardly compressed and margined; between the 2nd and 3rd pairs of coxæ the 2 orifices of the odoriferous organ developed into convoluted projecting processes; on all the segments the plates form sheaths round the base of the coxæ. *Legs; thighs* stout, narrower at the base and apex, unarmed; *tarsi* long; 1st joint on

the 1st and 2nd pairs as long as the other 2, on the 3rd pair longer.

Abdomen as in *Cymus*, but in the ♀, the 3rd genital segment is large, convex, ridged in the centre, and posteriorly broadly rounded.

Species 1.—Nysius Thymi.

Lygæus Thymi, *Wolff*, Ic. Cim. 149, 143, t. 15, fig. 143 (1804); *Fall.* Hem. Suec. 49, 3 *a* (1829).
Heterogaster Ericæ, *Schill.* Beitr. 86, 4, t. 7, fig. 10 (1829).
— Thymi, *Curt.* B. E. xiii, 597, 1 (1836); *Sahlb.* Geoc. Fen. 52, 2 (1848).
Cymus (Arthreneis) Ericæ ♂, *Flor*, Rhyn. Liv. i, 292, 2 (1860).
Nysius Thymi, *Fieb.* Europ. Hem. 169, 3 (1861).

Dull luteous; *head* and *pronotum* more or less obscured by black punctures; *antennæ* light brown; 1st joint yellow at the base; 4th piceous. *Corium* pale ochreous; nerves brown; posterior margin broadly piceous. *Legs* yellow; *thighs* spotted with brown.

Head with rather large, irregular black punctures; *Crown* usually with a broad, black, longitudinal line on each side, but leaving the orbit of the eyes luteous, the dark line sometimes branching out to the base of the central lobe of the face; base often with a clear yellow spot; *Face;* lobes luteous, or deep yellow; outer margin of the side lobes and sides of the central lobe black. *Antennæ* light brown; 1st joint yellow at the base, the rest spotted with black; 2nd and 3rd light, or yellow-brown, piceous at the apex, or entirely pitchy-brown; 4th piceous. *Eyes* and *Ocelli* piceous. *Rostrum* black.

Thorax.—Pronotum with irregular punctures, larger than those on the head; anterior margin usually clear luteous; the narrow transverse incision black, unpunctured, obscured by a broader transverse, black band, from which sometimes a short black spur juts down the centre of the disk, or a fine pale line extends down the middle, from the anterior to the posterior margin, there expanding into a smooth spot; the callus at the hinder angles pale luteous, shining, unpunctured, with a brown or black spot on each side. *Scutellum* more or less obscured by black punctures, finer than those on the pro-

notum; side margins, and the keel at its apex, brown or yellow. *Elytra; Clavus* and *Corium* pale-ochreous; *Clavus* convex, except at the apex, the margins with a piceous, often interrupted line; *Corium* with 2 piceous, often interrupted lines, each on a nerve; anterior margin with a brown line on the edge; posterior margin broadly piceous, often interrupted; *Membrane* diaphanous; nerves clear, with broad, dusky, interrupted shades between them. *Sternum* black; margins of the segments narrowly yellow; a large spot at the base of each coxæ, and the convoluted process, pale-yellow. *Legs* yellow; *thighs* with large piceous spots, often confluent, apex clear; *tibiæ* yellow-brown, base and apex darker; *tarsi;* 1st joint at the apex, 3rd entirely, piceous.

Abdomen black; beneath, in the ♂ the last 3, in the ♀ the last 4 abdominal segments yellow, except at the sides; posterior margin of the last piceous, or black. *Stigmata* yellow. *Connexivum* yellow on the edge, and sometimes on the underside. *Genital segments* in the ♂ black, in the ♀ yellow.

Length, 1½—2 lines.

Local. Stated to be attached to *Thymus Serpyllum*. Deal, August; Portmarnock (*Wollaston*); under stones, Portland, May, and running quickly over the sandhills near Lowestoft, June (*Curtis*).

Fieber enumerates 8 other species, some of which probably occur in Britain.

Family 3.—HENESTARIDÆ.

Genus 1.—Henestaris, *Spin.*

Elliptic.

Head short; across the eyes broader than the front of the pronotum; *Crown* very short and slightly convex, at the sides produced into a broad peduncle of the eyes; the antenniferous processes very short, obtuse; *Face* broad, short, triangular, very convex and deflected; central lobe at the end obtuse; side lobes broad, pointed, almost as long as the central lobe; anterior margin slightly concave. *Antennæ* strong, short; 1st joint thickest, shorter than the head, ½ the length projecting beyond the end of the face; 2nd and 3rd each a little thickened at the apex; 2nd

about ⅓rd longer than the 1st; 3rd and 4th in length subequal, each shorter than the 2nd; 4th fusiform, scarcely so thick as the 1st. *Eyes* large, hemispherical, placed at the end of a long, thick peduncle. *Ocelli* large, distant. *Rostrum* reaching across the metasternum, 1st joint as long as the head.

Thorax.—Pronotum broad, trapeziform, convex; anterior and posterior margins nearly straight; sides a little constricted before the middle; hinder angles prominent, obtusely rounded; disk on the 1st 3rd slightly raised, behind it a sharp, transverse impression. *Scutellum* large, triangular; base with a deep transverse depression, the remainder convex, almost ridged in the centre, and with a small callosity at the basal angles on the margin of the depression. *Elytra* as long as the abdomen; *clavus* deflected to the corium; *Corium;* anterior margin nearly straight; posterior margin straight, incrassated; nerves not prominent; *Membrane* with 5 prominent nerves; the 1st short, curved to the anterior margin; the 2nd and 3rd arise together near the base, and diverge straight to the posterior margin; the 4th and 5th arise near together at the base; the 4th curves towards the 3rd, and is then straight; the 5th, at first very thick, curves a little towards the inner margin, it then becomes obsolete, but reappears after a short interval, and, like the 4th, goes to the posterior margin. *Sternum; Mesosternum* in the centre with a deep fovea; *xyphus* short, pointed. *Legs* short, stout; *thighs* gradually less toward each end; *tibiæ* gradually thicker to the apex; *tarsi* stout, long; 2nd joint ½ the length of the 3rd; on the last pair the 1st joint as long as the other 2.

Abdomen in the ♀ beneath, the 1st 3 segments posteriorly straight; the 4th a little shorter, and the 5th very short in the middle; the 6th greatly deflected, long, ridged in the centre, posterior margin rounded and sinuate. *Genital segments;* 1st small, overlying the base of the 3rd in 2 points; 3rd convex, with a deep longitudinal cleft, in the centre of which is a ridge, sides narrowed to an obtuse point; the 2nd appears as a short, triangular plate at the sides of the 3rd.

Species 1.—Henestaris laticeps.

Heterogaster laticeps, *Curt.* B. E. p. & fig. 597 (1836).
Henestaris Spinolæ, *A. Costa*, Corr. Zool. i, 136, pl. 11 (1839); Ann. Soc. Ent. France, x, 304 (1841); *Am. et Serv.* Hém. 250, 1, (1843); *Fieb.* Europ. Hem. 174 (1861).
— Genei, *Spin.* Hém. 230, 1 (1840).
— Hispana, *Ramb.* F. And. ii, sp. 145 (1842).

Ochreous, dull, more or less clouded with brown, and with very fine, short, yellow hairs.

Head ochreous, black-punctured; with a black line round the base of the peduncle of the eyes, and on the peduncle 2 black spots; *Face;* central lobe with a narrow black margin. *Antennæ* ochreous-brown, with fine short hairs, and indistinct, piceous spots; 1st joint darker, black beneath; 4th pitchy-black. *Eyes* brown. *Ocelli* red. *Rostrum* piceous, 1st joint paler.

Thorax.—Pronotum ochreous, with distinct, round, black punctures; behind the anterior margin 2 black foveæ; the sides, a central line, the hinder angles, and a spot on the middle of the posterior margin, clear. *Scutellum* ochreous, with strong black punctures, except on the centre and posterior convexity, which are clear and smooth. *Elytra; Clavus* with 4 rows of black punctures, and a black, punctured spot towards the end; *Corium* with black punctures in rows, ochreous on the inner side and base of anterior margin, the rest of the disk (except a long, raised ochreous spot near the posterior margin) piceous; posterior margin piceous or black, except at the inner angle; *Membrane* transparent; nerves (except the base of the 4th and 5th) dusky, the space betwen them, especially between the 2nd and 3rd, with an opaque dotted shade; inner basal angle clear. *Sternum* ochreous-brown, with fine, black punctures; the centre black. *Legs* ochreous; *thighs* nearly covered with large confluent, black spots; *tarsi* piceous; base of the 1st and 2nd joints ochreous.

Abdomen above, black; *Connexivum* ochreous-brown, paler at the junction of the segments, the edge brown. Underside ochreous-brown, the 2 basal segments in the middle black; the margins of all

the segments narrowly, the centre of the 6th abdominal and the 3 genital segments, and a row of spots along the sides, piceous.

Length, 2½ lines.

Rare. Under a stone at Blackgang Chine, Isle of Wight, 4th August (*Curtis*).

Family 4.—CYMIDÆ.

Genus 1.—Chilacis, *Fieb.* (in litt.)

Oval, flat.

Head long, across the eyes not so wide as the front of the pronotum, slightly convex; *Crown;* sides straight to beyond the eyes; *Face* narrower than the crown, long, triangular; central lobe long, widest in front, apex obtuse; side lobes not so long as the central lobe, narrow, pointed in front, the outside concave; a deep channel on their inner sides parallel to the central lobe; antenniferous processes very short. *Antennæ* rather stout; 1st joint not reaching the end of the face; 2nd and 3rd slightly and gradually thickened towards the apex; 2nd 2½ times as long as the 1st; 3rd and 4th in length subequal, each not so long as the 2nd; 4th obtuse-fusiform. *Eyes* rather large, round, slightly flattened. *Ocelli* distant; inserted close to the inner side of the eyes. *Rostrum* reaching over the mesosternum; 1st and 2nd joints long, in length subequal; 3rd longer; 4th very short.

Thorax.—Pronotum trapezoidal, flattened; anterior margin concave, anterior angles rounded, depressed; side margins horizontal, widest on the 1st ½, narrower behind; hinder angles rounded, with a large callus within them; posterior margin slightly concave; disk, in front with 2 slight callosities; centre and sides in front depressed; at the middle of the length, towards each side, a deep fovea. *Scutellum* large, triangular; base with a deep fovea, of which the side margins are raised into the form of a V. *Elytra* longer than the abdomen; *Clavus* deflected to the *corium;* claval suture greatly depressed; *Corium;* anterior margin curved, at the base broad, gradually narrower, reflexed; posterior margin rounded; disk convex; 1st nerve greatly raised, beyond the middle flatter and furcate; *Membrane* thin, with 4 nearly straight nerves arising at

the base. *Sternum* flat, the orifices of the odoriferous organ largely developed. *Legs; thighs* clavate; *tarsi* strong; 2nd joint shortest; 3rd dilated, as long or longer than the 1st; claws long.

Abdomen above flat; *Connexivum* broad, reflexed. Underside convex.

Species 1.—Chilacis Typhæ.

Heterogaster Typhæ, *Perris*, An. Soc. Lin. Lyons, N. S. iv, 159 (1857).

Testaceous-ochreous shining.

Head; a broad line on the lateral margins, the channel on each side of the central lobe, and a central line joined thereto, and going nearly to the base, black, with fine, distinct punctures; the ground colour appearing distinct and unpunctured on the central lobe of the face, continued backward as two lines, joining a spot at the base, and also appearing as a spot on the sides next the eyes. *Antennæ* testaceous, brownish at the extremity, or brown with the apex of the joints ochreous. *Eyes* brown. *Ocelli* yellow. *Rostrum* piceous; the junction of the joints ochreous.

Thorax.—Pronotum with strong, confluent, black punctures, among which the ground colour appears in smooth, raised, tortuous lines; lateral margins clear, with a brown line on the edge; posterior margin clear; the callus at the hinder angles pale, with fine, brown punctures. *Scutellum* black, with large, distant punctures; the V-form marked testaceous, unpunctured, except at the apex. *Elytra; Clavus* with large, black punctures, next the claval suture distant, and in 2 rows; the others more irregular, but forming a line next the inner margin, which is broadly ochreous at the base; *Corium;* anterior margin and nerves broad, clear, unpunctured; the rest of the disk with close, black punctures, finer than those on the clavus; anterior margin with a brown line on the edge; apex piceous; *Membrane* whitish, transparent. *Sternum* black, with irregular punctures; margins of the segments and a large spot at the base of each coxæ outwardly, ochreous. *Legs; thighs* piceous, the base and apex ochreous; *tibiæ* pale orange, with fine, short hairs; *tarsi* pale orange, last joint and claws piceous.

Abdomen beneath yellow-brown; base and each side of the middle,

piceous; posterior margin of each segment ochreous; *Connexivum*, a brown spot on each segment.

Length, 2 lines.

Rare. Some old examples in the late Mr. Curtis's collection had a ticket attached, stating that the species had been taken in profusion at Stockton, in November, in the seed spikes of *Typha latifolia*, by the Rev. G. T. Rudd.

Genus 2.—ISCHNORHYNCHUS, *Fieb.*

Short, oval, convex, slightly shining.

Head broad, 5-sided: *Face* triangular; central lobe longest, apex obtuse; side lobes broad at the base, narrow and pointed in front. *Antennæ* inserted on a tubercle in front of and below the eyes; 1st joint stout, reaching a little beyond the end of the face; 2nd and 3rd thinner, 2nd rather longer than the 3rd; 4th fusiform, as long as the 2nd. *Eyes* large, semiglobose, prominent. *Ocelli* distant. *Rostrum* reaching beyond the metasternum; 1st 3 joints in length subequal, the 1st in a channel, of which the sides in front are considerably raised.

Thorax.—Pronotum trapezoidal; anterior margin nearly straight; sides a little constricted in front; hinder angles prominent; posterior margin rounded, with a deflection on it within the hinder angles, but not extending to the centre; disk convex, in front with a broad, transverse band-like depression, but raised within the anterior margin. *Scutellum* broad, triangular; base with a deep transverse depression, the rest convex, almost ridged and keeled. *Elytra* longer and broader than the abdomen; *Corium* convex, thin, almost diaphanous; anterior side almost as long as the abdomen, considerably rounded, the margin recurved; posterior margin a little concave; the nerves on the disk very fine; *Membrane* broad, lustrous, transparent; the two outer nerves only arise at the base, curve and proceed to the posterior margin; the other 3 arise at a point just within the apex of the corium, and curving suddenly outside one another, proceed to the margin. *Sternum* flat in the centre, the posterior margin of each segment raised and covering the basal ½ of each coxa; on each side, between the 2nd and 3rd coxæ, attached to the anterior margin of the *metasternum* is a longish, distinct,

somewhat mussel-shaped process, standing out sideways, having towards its outer end a strong depression or slit,—the orifice of the odoriferous organ. *Legs* strong; *thighs* thick beyond the middle, smaller at the base and end; *tarsi;* 1st and 3rd joints long; in length subequal, the 3rd stoutest.

Abdomen above flat, beneath convex; *Connexivum* deep, greatly reflexed. Underside, in the ♀ the centre of the 2nd segment is swollen, and posteriorly gives out a keel which extends across the 3rd. *Genital segments* after the same type as *Cymus*, except that the 3rd is convex, and rounded at the end.

Species 1.—Ischnorhynchus Resedæ.

Lygæus Resedæ, *Panz.* F. G. 40, 20.
— didymus, *Zett.* Act. Holm. 71 (1819); *Fall.* Hem. Suec. 50, 4 (1829).
Heterogaster Resedæ, *Schill.* Beitr. 80, t. 8, fig. 5 (1829); *Burm.* Handb. ii, 292, 1 (1835); *H. Schf.* Nom. Ent. i, 46 (1835).
Cymus Resedæ, *Kolen.* Mel. Ent. ii, 92, 64 (1845); *Sahlb.* Geoc. Fen. 71, 1 (1848).
— (Lyctus) Resedæ, *Flor*, Rhyn. Liv. i, 296, 4 (1860).
Ischnorhynchus didymus, *Fieb.* Europ. Hem. 199, 1 (1861).
— Resedæ, *Stål*, Vet. Akad. Förhand. 213, 1 (1862).

Head reddish, base narrowly black; often with 2 black, pointed dashes enclosing the red *ocelli*. *Antennæ;* 1st joint black; 2nd ochreous-brown, base and apex black; 3rd ochreous-brown, base black; 4th black, apex piceous. *Eyes* pitchy black. *Rostrum* piceous, base ochreous beneath,

Thorax.—Pronotum strongly punctured, ochreous-red, the front often piceous; the anterior depressed portion posteriorly with a transverse, smooth, sometimes sinuate black line interrupted in the middle; centre of the disk with a pale, longitudinal line; posterior margin sometimes black. *Scutellum* lightly punctured, reddish, base pale and more strongly black-punctured. *Elytra; Clavus* ochreous, with 2 rows of strong punctures, anterior margin reddish, apex piceous; *Corium* ochreous, very finely punctured; anterior margin with a fine brown line along the edge; inner margin red; posterior margin reddish, externally with a fine brown line more or less distinct; a

whitish spot near the base, a large spot at the end of the 1st nerve, and the apex piceous; on the disk, below the middle, two piceous spots each one on a nerve; the outer nerve usually brownish as far as the spot; *Membrane* spotless. *Sternum* on the centre black, on the sides whitish, with strong distant black punctures; on the *Metasternum* a distinct, large, oval, black spot; posterior half of the segment clear, creamy white; the process at the base of the coxæ cream coloured, with the depression thereon dusky. *Legs; thighs* red; *tibiæ* reddish; *tarsi;* 1st joint reddish, apex piceous; 2nd and 3rd black.

Abdomen above; shining, basal half black, the junction of the segments and the posterior segments entirely, red; *Connexivum* red, with a broad, interrupted piceous band on the upper half. Underside very finely and closely haired, black; posterior segments more or less brown.

Length, 2 lines.

Not uncommon among heath, nearly throughout the year.

Genus 3.—Cymus, *Hahn.*

Elongate, narrow, sub-elliptic.

Head short; *Crown* rather convex, quadrangular; sides a little widened in front, and ending in a short process, within which the antennæ are deeply set; *Face* short, curved in a line with the crown; central lobe wide, obtuse; side lobes narrow and short. *Antennæ* as long as the head and pronotum; 1st joint thick, reaching as far the end of the face, not ⅓ so long as the 2nd; 2nd and 3rd thin; 4th shorter than the 3rd, fusiform. *Eyes* small, semi-globose, prominent. *Ocelli* rather nearer to the eyes than to each other. *Rostrum* reaching across the mesosternum; basal joint as long as the head, and not in a channel.

Thorax.—Pronotum long trapeziform; anterior margin straight, a little raised; hinder angles rounded, but prominent; disk slightly depressed transversely just behind the anterior margin; in the centre of the first half a short, slight keel; posteriorly deflected to the posterior margin. *Scutellum* small, triangular, base depressed, centre raised, carinate. *Elytra* wider and longer than the abdomen; *Corium* with the nerves very fine; *Membrane* wide, with 5 nerves, of which only the two inner ones (*i.e.* the 4th and 5th) arise at the

base; their course is at first straight and parallel; they then turn suddenly outwards for a short distance, and again resume their course to the posterior margin; at the angle thus formed in the centre of the membrane, the other 3 nerves arise from a common point and radiate outwards. *Sternum; Mesosternum* with a rounded rostral channel, which is also continued, but more narrowly, across the *metasternum*. *Legs* short; *thighs* a little thicker in the middle; *tarsi*; last joint thickest, as long as the 1st.

Abdomen beyond the 5th segment gradually narrower; in the ♂ the posterior margin of all the segments is straight; in the ♀, the 4th is from the connexivum inwards gradually shorter, so that in the centre it is just visible; the 5th is similarly shortened, and in the centre passes under the 4th segment; the 6th segment long, sloping flatly outwards from a ridge in the centre; the anterior and posterior margins parallel. *Connexivum* broad. *Genital segments*; in the ♂, beneath, 2 are visible, of which the 1st is only perceptible in the centre; the 2nd much narrower than the last abdominal segment, but globose and prominent, forming a rounded end to the abdomen; in the ♀, above, 2 are visible; beneath 3, deflected to the apex with a ridge down the centre; the 1st placed in the centre of the angle of the last abdominal segment, is posteriorly angulated, and reaches over on the large convex 3rd segment which has a slight fissure in the centre, is posteriorly constricted at the sides and ends in an obtuse point; the 2nd appears at the anterior margin of the 3rd as a narrow, long, angulated plate, of which the apex goes under the 1st.

Species 1.—Cymus clavicULUS.

Lygæus clavicULUS, *Fall.* Mon. Cim. 64, 4 (1807); *Germ.* F. Ins. Europ. x, t. 12 (1813).

— Caricis, *Fall.* Hem. Suec. 51, 5 (1829); *Zett.* Ins. Lap. 264, 14 (1840).

Heterogaster clavicULUS, *Schill.* Beitr. i, 90, t. 8, fig. 6 (1829); *Meyer*, Stett. Ent. Zeit. ii, 89 (1841).

Cymus — *Hahn*, Wanz, i, 77, t. 12, fig. 44 (1831); *Burm.* Handb. ii, 292, 3 (1835); *Am. et Serv.* Hém. 259, 1 (1843); *Kolen.* Mel. Ent. ii, 91, 63 (1845); *Sahlb.* Geoc. Fen. 72, 2 (1848); *Fieb.* Europ. Hem. 204, 3 (1861); *Stål.* Vet. Akad. Förh. 223, 2 (1862).

— (Cymus) clavicULUS, *Flor*, Rhyn. Liv. i, 300, 6 (1860).

Head reddish-ochreous, sometimes darker in front, strongly punctured. *Antennæ* reddish or brownish-yellow, 2nd joint nearly ¼ shorter than the 3rd, the extreme end of the 3rd pitchy-black; 4th black, with the base yellowish. *Eyes* black-brown. *Ocelli* concolorous with the head. *Rostrum;* 1st two joints yellowish beneath, their upper side and the other joints entirely piceous or black.

Thorax.—Pronotum convex, slightly shining, strongly and thickly punctured; anterior margin deep brown or black, the disk behind it, and also within the hinder angles, reddish, the remainder ochreous, sometimes with a greenish tinge; central keel whitish. *Scutellum* reddish ochreous, basal angles (and sometimes the entire base) pale, centre whitish. *Elytra; Clavus* and *Corium* shining, punctured finer than the pronotum; *Clavus* reddish-ochreous, inner margin pale; *Corium* ochreous; anterior margin reflexed; posterior margin straight, thick, red-brown, the colour narrower in the centre; the end of the inner nerve also red-brown; *Membrane* lustrous. *Sternum* piceous or black, with whitish shades. *Legs* ochreous or yellow; *thighs* sometimes with a brown shade; *tarsi* ochreous; *claws* black.

Abdomen above, ochreous tinged with vermilion, base black, centre dusky; *Connexivum* ochreous, base and junction of the segments vermilion. Underside ochreous or with the basal segments piceous, very finely crenate.

Length, 1¾ line.

Not rare in sandy and dry places, in tufts of grass and other herbage. Deal, in August; Dartford and Lewisham, in September; Mickleham, in October; Tintern (*Wollaston*).

Species 2.—CYMUS GLANDICOLOR.

CYMUS GLANDICOLOR, *Hahn.* Wanz. i, 179, t. 12, fig. 45 (1831); *Fieb.* Europ. Hem. 203, 1 (1861); *Stål.* Vet. Akad. Förh. 223, 1 (1862).
HETEROGASTER — *Meyer,* Stett. Ent. Zeit. ii, 89 (1841).
CYMUS (CYMUS) — *Flor,* Rhyn. Liv. i, 299, 5 (1860).

Head strongly punctured; above reddish-ochreous, sides reddish-brown; beneath black. *Antennæ;* 1st joint scarcely reaching to the end of the face, usually piceous; 2nd and 3rd in length subequal, reddish-ochreous; 4th black, the base reddish-ochreous. *Eyes* black-brown. *Ocelli* concolorous with the head. *Rostrum* ochreous beneath; above, and at the end piceous.

Thorax.—Pronotum slightly convex, and shining, more strongly punctured than the head; anterior margin broadly pitchy-black; disk, 1st third reddish-ochreous, in the middle of which colour is usually a transverse, piceous band; sides ochreous, the rest with a greenish tinge in which the punctures appear black. *Scutellum* reddish ochreous, lateral margins black, centre whitish. *Elytra; Clavus* and *Corium* slightly shining, more deeply and widely punctured than the pronotum; the apex of the *Clavus* piceous; *Corium* ochreous, internally flat, externally convex; anterior margin reflexed; posterior margin slightly sinuate, narrowly brown; on the disk, on the inner nerve, a piceous dash extends upwards and inwards, broadest and darkest on the posterior margin, disappearing at about ½ the length of the nerve; *Membrane* lustrous; in the centre of the base a large piceous spot (in continuation of the dash on the corium); the space between the 2nd and 3rd, and 3rd and 4th nerves light fuscous. *Sternum* lightly punctured, black; the sides more or less reddish-ochreous. *Legs* ochreous or yellowish; *thighs* (except the tips) with a brown tinge; *tarsi* ochreous, the last ½ of the 3rd joint, and the claws black.

Abdomen above brown, centre and sides black; *Connexivum* brown. Underside, base black, towards the apex piceous or ochreous.

Length, 1¾—2 lines.

Not rare where it occurs. Lee, in October; in tufts of *Carex* growing in an old clay-pit.

Family 5.—ZOSMERIDÆ.

Genus 1.—Zosmerus, *Lap.*

Oval.

Head short, broad, deflected; *Crown* short; sides produced round the base of the eyes, and projecting before them in an angulated spinose point, between which and the face the antennæ are inserted on a short tubercle; *Face* long; central lobe broad, prominent; side lobes much longer than the central lobe, curved inwards at the ends. *Antennæ* short; 1st joint very thick, subpyriform, with a short petiole; 2nd not so long as the 1st, much thinner, clavate; 3rd longer than the 1st and 2nd together, filiform; 4th stout, longer that the 1st, fusiform. *Eyes* subpedunculate, very prominent.

Ocelli small, distant; inserted close to the anterior margin of the pronotum. *Rostrum* reaching to the 1st pair of coxæ, lying in a channel; 1st and 2nd joints in length subequal, 3rd ½ the length of the 2nd; 4th 3 times longer than the 3rd.

Thorax—Pronotum deflected; broad, subquadrate or trapezoidal, convex, in front raised and compressed round the base of the head, the part so raised posteriorly distinctly defined by a transverse depression, with 2 or 3 longitudinal keels on the top, and at its sides a slight callosity; sides gradually, from the hinder to the anterior angles depressed, flattened, foliaceous, and finely reticulated; anterior angles rounded; hinder angles callous; posterior margin slightly rounded. *Scutellum* small, triangular. *Elytra* as long as the abdomen; *Clavus* and *Corium* closely punctured, subreticulate; *Clavus* broad, trapezoidal, deflected to the corium; *Corium;* apex prolonged round the anterior margin of the membrane; nerves strong, 2 in the middle arising together at the base and then diverging; *Membrane* with 4 nerves, the 1st curved the others straight; base with a broad, well defined, coriaceous, reticulated portion. *Sternum: Mesosternum* with a rostral channel; *Metasternum* with a grooved plate between the 2nd and 3rd pairs of coxæ. *Legs* rather short, finely granulated; *tarsi* stout, 3-jointed; 1st joint very small, hidden; 3rd longest, clavate (the smallness of the 1st joint makes the tarsi appear only 2-jointed); claws short, curved.

Species 1.—ZOSMERUS QUADRATUS.

ZOSMENUS QUADRATUS, *Fieb.* Ent. Mon. 31, 1, t. 2, figs. 7, 9, 11 (1844); Europ. Hem. 116, 1 (1861).

Pale gray, with dark gray or blackish spots, but sometimes pale greenish-white, pale gray or pale red, and spotless. *Pronotum* subquadrangular, sides straight; anterior part of the disk with 3 keels.

Head: Crown usually with a black spot on each side of the base; *Face*, central lobe long, the margins with a black line; side lobes with the ends obtusely pointed, generally black, curved, and meeting at a short distance before the end of the central lobe. *Antennæ* brownish-yellow; 1st joint subconic, or pyriform; 4th brown on the apical ½. *Eyes* red or brown.

Thorax.—Pronotum much deflected, subquadrate, the sides straight (the margins not sinuate); from the hinder angles forward gradually flatter, wider and foliaceous, with 2 or 3 rows of reticulated punctures, the margins narrowly reflexed; anterior angles very broadly rounded; posterior angles rounded; disk with strong, contiguous punctures; anterior raised portion at its base black, its surface with 3 parallel, longitudinal keels arising at the anterior margin, and reaching to the highest part of the posterior convexity; the latter more or less spotted or suffused with black; sometimes also the foliaceous sides have 2 or 3 black spots. *Scutellum* black, apex nodular, yellow. *Elytra; Clavus* and *Corium* finely punctate-reticulate, with indistinct, gray or blackish spots, sometimes distinctly defined; *Clavus;* apex brown or black; *Corium;* anterior margin narrowly reflexed, with 4 or 5 distinct blackish spots; nerves darker than the disk: *Membrane;* the coriaceous basal portion coloured like the *corium,* the remainder colourless, shining; nerves dusky at the base. *Legs* concolorous with the antennæ.

Abdomen above black; *Connexivum* dusky, lighter at the junction of the segments. Underside pale.

Length, 1½—1⅔ line.

Found on the ground, under *débris* and at the roots of grass, in sandy places. Southampton Water, September; Hove, near Brighton, October.

Species 2.—Zosmerus Laportei.

Zosmenus Laportei, *Fieb.* Ent. Mon. 33, 3, t. 2, fig. 17 (1844); *H. Schf.* Wanz. ix, 193 (1850); *Flor,* Rhyn. Liv. i, 313, 1 (1860); *Fieb.* Europ. Hem. 117, 4 (1861).

Dusky ochreous or yellowish-gray; unicolorous, or with indistinct dusky spots. *Pronotum* subtrapezoidal, not much narrowed in front, side margins deeply concave, anterior part of the disk with 2 short keels, not reaching the anterior margin.

Head; rarely entirely brown, usually the *crown* at the base narrowly black, or piceous; front and frontal spines ochreous, the latter with a black line on the inner margin; *Face;* central lobe usually clear ochreous, sometimes dusky, with a black line on its sides; side lobes ochreous, their ends curved and meeting, in the ♀

close to end of the central lobe, in the ♂ at a short distance before it. *Antennæ* yellowish-brown, end of the last joint mostly brown. *Eyes* black or piceous. *Rostrum* yellow-brown, end piceous.

Thorax.—*Pronotum* subtrapezoidal; the foliaceous sides beginning very narrow before the hinder angles, moderately and gradually widened to the front, their margin deeply concave, as if cut out in the middle, narrowly reflexed; anterior angles broadly rounded; disk dusky ochreous, usually with 3 broad, longitudinal, brown stripes; the anterior raised portion pale-ochreous, its base with a blackish, foveate spot on each side, its surface with 2 short keels arising within the anterior margin, and ceasing before the highest part of the posterior convexity; the punctures anteriorly small and confluent, posteriorly larger and distinct. *Scutellum* black, apex raised, obtuse. *Elytra; Clavus* and *Corium* mostly ochreous-gray, finely reticulate-punctate; *Clavus* with a brown spot in the middle, apex piceous; *Corium* with a large, clear, whitish space at the base, between the nerves dusky gray spots more or less distinct; *Membrane;* the basal reticulated portion coloured like the *corium*, the remainder white; nerves yellow-brown, with a black spot on the base. *Legs* concolorous with the antennæ; *Claws* black.

Length, 1—1¼ line.

Found on the ground, among thistles, &c.; Bickley, May; Brighthampton, April (*Stone*).

Species 3.—ZOSMERUS CAPITATUS.

ACANTHIA CAPITATA, *Wolff.* Ic. Cim. 131, 125, t. 13, fig. 125 (1804).
TINGIS — *Full.* Mon. Cim. 40, 12 (1807); Hem. Suec. 150, 14 (1829); *H. Schf.* Nom. Ent. i, 59 (1835); *Zett.* Ins. Lap. 269, 6 (1840).
— PEDICULARIS, *H. Schf.* Nom. Ent. i, 59 (1835); *Panz.* F. G. 100, 19.
ZOSMERUS CAPITATUS, *Burm.* Handb. ii, 262, 1 (1835).
TINGIS COLLARIS, *Zett.* Ins. Lap. 269, 7 (1840).
PIESMA CAPITATA, *Am. et Serv.* Hém. 301, 1 (1843).
ZOSMENUS CAPITATUS, *Fieb.* Ent. Mon. 34, 4, t. 2, fig. 18 (1844); *Sahlb.* Geoc. Fen. 128, 1 (1848); *H. Schf.* Wanz. ix, 193, t. 318, fig. 983 (1850); *Flor.* Rhyn. Liv. i, 315, 2 (1860); *Fieb.* Europ. Hem. 117, 5 (1861).
— ANTICUS, *Fieb.* Ent. Mon. 34, 5, t. 2, fig. 19 (1844); *Sahlb.* Geoc. Fen. 128, 2 (1848); *Kolen.* Mel. Ent. vi, 6, 205 (1857); *Fieb.* Europ. Hem. 117, 6 (1861).

Ochreous-gray, with dusky spots. *Pronotum* trapezoidal; side margins slightly concave, anterior part of the disk with 2 short keels, not reaching the anterior margin.

Head ochreous, very finely punctured; *Crown* narrowly black at the base; *Face;* central lobe with a black line on each side; side lobes longest in the ♂, their ends sometimes dusky, meeting. *Antennæ* yellowish-brown. *Eyes* black or piceous. *Rostrum* yellow brown, end piceous.

Thorax.—Pronotum trapezoidal; the foliaceous sides beginning very narrow before the hinder angles, moderately and gradually widened to the front, their margins slightly concave, narrowly reflexed; anterior angles broadly rounded; disk ochreous, with 3 or 5 longitudinal brown stripes, or unicolorous light brown, except on the anterior raised part, which is always pale, and has on its surface 2 very short keels arising within the anterior margin; the transverse depression at its base deep, depressed outside the keels into a fovea, which is black; the punctures anteriorly small and confluent, posteriorly larger and distinct. *Scutellum* black, apex raised, obtuse. *Elytra; Clavus* and *Corium* ochreous-gray, very finely reticulate-punctate; *Clavus* black at the apex; *Corium* clouded, or indistinctly spotted with fuscous, usually pale at the base; *Membrane;* the basal reticulated portion coloured like the corium, the remainder whitish; nerves yellow-brown, with a black spot on the base. (Sometimes the *Membrane* is not developed beyond the basal reticulated portion, and the wings are wanting.—*Z. anticus.*) *Sternum;* sides whitish, deeply punctured; mesosternal channel ochreous; metasternal plate white. *Legs* concolorous with the antennæ; *Claws* black.

Abdomen beneath, ochreous-brown, spotted or clouded with fuscous or black.

Length, 1¼ line.

Extremely like *Z. Laportei*, the greatest point of distinction being the form of the *pronotum*.

On banks, and dry places under plants; Lee, April; Bickley, May; Foots Cray, June.

Section 6.—*TINGIDINA.**

Family 1.—AGRAMMIDÆ.

Genus 1.—Agramma, *Westw.*

(Introd. Mod. Class.)

Long-oval, convex, without reticulated margins to the *pronotum* and *elytra*.

Head large, convex; sides from the eyes forward raised in a ridge, which projects in front as a subacute antenniferous process; *Face* short, vertical, central lobe prominent, with a deep groove on each side. *Antennæ* stout, inserted in front of the head; 1st joint short, thickest; 2nd thick, about ½ the length of the 1st; 3rd thinnest, the base a little thicker than the apex, longer than the 1st and 2nd together; 4th subfusiform, not ½ the length of the 3rd. *Eyes* large, somewhat flattened, projecting wider than the front of the pronotum. *Rostrum* thin, 4 jointed, the joints subequal, lying in a deep channel and reaching a little beyond the 1st pair of coxæ.

Thorax.—Pronotum subrhomboidal, anterior margin constricted, concave, keeled; disk highest before the hinder angles, deflected in front and posteriorly, the scutellar process transversely depressed at the base. *Elytra* longer and wider than the abdomen, with one fine straight nerve towards the sides, the inner margin of one elytron lapping over the other; anterior margin very narrow. *Sternum* depressed, the middle with a wide, shallow channel. *Legs* short, strong; *thighs* thickened beyond the base; *tarsi* very short, 1st joint thin, 2nd wide.

Species 1.—Agramma lætA.

Tingis lætA, *Fall.* Hem. Suec. 151, 15 (1829); *Germ.* F. Ins. Europ. 10, t. 14.

Piesma tricolor, *Lap.* Ess. 48 (1832).

— lætum, *Burm.* Handb. 257, 1 (1835).

Serenthia lætA, *H. Schf.* Wanz. iv, 49, 388 (1839); *Am. et Serv.* Hém. 300, 1 (1843).

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AGRAMMIA LÆTA, *Fieb.* Ent. Mon. 37, 1, t. 2, figs. 22—28 (1844); Europ. Hem. 119, 4 (1861).
— LÆTUM, *Flor*, Rhyn. Liv. i, 324, 1 (1860).

Black, the anterior margin and scutellar process of the *pronotum*, and the *elytra* wholly pale ochreous; *legs* yellow-brown.

Head finely punctured. *Antennæ* finely granulated, the upper part of the 3rd and base of the 4th joints generally red. *Rostrum* piceous; the edges of the rostral channel ochreous.

Thorax.—Pronotum strongly, distinctly punctured; a fine raised line down the middle; anterior margin and scutellar process pale ochreous. *Elytra* oval, convex, pale ochreous, with fine, distinct, granulated punctures; anterior margin delicately reflexed. *Sternum* strongly punctured, anterior margin of *prosternum* and the edges of the central channel narrowly ochreous. *Legs* yellow-brown; end of the last joint of the *tarsi* brown.

Abdomen beneath, delicately punctured.

Length, 1½ line.

Local; Box Hill, Surrey, by sweeping grass, May; Deal, July; Tunbridge Wells, August.

FAMILY 2.—TINGIDIDÆ.

Genus 1.—MONANTHIA, *Le P. et Serv.*

Long-oval, reticulated.

Head short, transverse-quadrangular, furnished with spines; sides produced in front to form short antenniferous processes; *Face* vertical. Underside with a deep rostral channel of which the sides are much produced. *Antennæ* short; 1st joint short and thick; 2nd short, subcordate; 3rd long, thin; 4th thick. *Eyes* small, more or less prominent. *Rostrum* (apparently 5 jointed) reaching to the end of the meso- or metasternum.

Thorax.—Pronotum rhomboidal, in front truncate; anterior margin raised into a hood; the scutellar process long, pointed, its base depressed; side margins projecting or lapped over and appressed to the disk, which is more or less convex across the middle, deflected before and behind, and with 3 longitudinal keels. *Elytra* longer and broader than the abdomen, the base broadly rounded, but narrower

than the pronotum; anterior margin reflexed; disk with a long central space enclosed by prominent nerves, forming a rhomboidal cell, from the end of which a nerve is produced to the apex; sides, outside the cell, deflected or vertical. *Sternum* with a rostral channel gradually widening throughout, sometimes on the *metasternum* produced into a flat plate between the coxæ. *Legs* short, thin.

Species 1.—Monanthia Humuli.

Acanthia Humuli, *Fab.* E. S. 4, 77, 43 (1794).
Tingis — *Fab.* S. R. 126, 7 (1803).
Monanthia convergens (*Klug*), *Burm.* Handb. ii, 261, 5 (1835); *H. Schf.* Wanz. iv, 15 & 58, t. 114, fig. 361 (1839).
— Humuli, *Fieb.* Ent. Mon. 84, 28, t. 7, figs. 17, 18 (1844); Europ. Hem. 125, 27 (1861).
— (Physatocheila) Humuli, *Flor*, Rhyn. Liv. i, 335, 12 (1860).

Ochreous-gray, sometimes with black reticulations; the over-lapped margins of the *pronotum* covering ¼th of the disk; anterior margin of the *elytra* with 2 rows of cells at the base and end, and one row in the middle.

Head black, deeply punctured; *Crown* in front with 2 very short yellow spines; antenniferous processes very short, obtuse. *Antennæ;* 1st 3 joints reddish-yellow, 4th subfusiform, hairy, black, the base yellow. *Eyes* black. *Rostrum* piceous, the raised sides of the rostral channel pale yellow, reticulated.

Thorax.—Pronotum; sides widened and slightly rounded to the hinder angles which are broadly rounded; hood small, anterior margin straight, pale; the over-lapped side margins whitish-gray, broad, convex, in front joining the base of the hood, posteriorly cut obliquely inwards; the reticulation in 4 rows of round meshes, in each mesh often a black spot; disk deeply depressed at the base of the hood, the highest part finely punctate-reticulate; scutellar process with larger reticulations and close to the margin a fine black line; keels yellow, not deep, the middle one passing over the hood and extending posteriorly to its apex where it is black, on the depression of the scutellar process there is but one row of small meshes; the side keels not so deep as the middle one, short, arising opposite the middle of the margin and ending before the middle of the margin

of the scutellar process. *Elytra* oval; anterior margin posteriorly very slightly sinuate, reflexed from the base to about the middle, thence gradually becoming flat; in the middle narrowed, with one row of meshes; at the base and beyond the middle with 2 rows of larger meshes; disk flat within the cells, outside them broad, deflected to the anterior margin; the outer nerves of the cells in the middle and at the apex with a long, black streak; the inner nerve in the middle usually with a black or piceous streak; the meshes about the same size as on the scutellar process, posteriorly gradually larger. *Sternum* deeply punctured, the raised sides of the rostral channel reticulated, pale yellow; margins of all the segments and the base of the coxæ pale yellow. *Legs* reddish-yellow; *tarsi;* end of the 2nd joint and the claws black.

Abdomen black, shining, delicately crenate.

Length, $1\frac{1}{2}$ line.

Not very common. On *Myosotis palustris* (*Burmeister*). Damp places in tufts of grass; Lee, April; Dorset (*Wollaston*).

Species 2.—MONANTHIA SIMPLEX.

TINGIS SIMPLEX, *H. Schf.* Panz. F. G. 118, 21 (1830).
MONANTHIA — *H. Schf.* Wanz. iv. 59, t. 125, fig. F (*Pronotum*), (1839).
— SCAPULARIS, *Fieb.* Ent. Mon. 80, 23, t. 6, figs. 38—40 (1844); Europ. Hem. 125, 24 (1861).

Pale, reddish-brown, convex; *head* with 5 short yellow spines; the overlapped side margins of the *pronotum* very convex, ovate, their edges meeting in the centre; side keels short, divergent; the reticulations small, deep, rounded, equal throughout.

Head black; *Crown* with a pustule; of the 5 spines 1 lies depressed on the inner margin of each eye, 1 in front of and attached to the pustule, the other 2 on the extreme front, contiguous to each other and apparently united. Antenniferous processes, short, yellowish. *Antennæ;* 1st 3 joints yellowish-brown; 4th not much thickened, and, except the base, black. *Eyes* black. Rostral channel yellowish.

Thorax.—Pronotum; anterior margin nearly straight; hood small, triangular, with small, punctured reticulation; the overlapped side margins oval, pointed in front, broadly rounded behind, forming two bladder-like excrescences, the inner margin of each at

the widest part touching the middle keel; scutellar process paler than the disk, whitish at the apex; keels strong, the middle one extending over the hood and not quite to the apex of the pronotum; the side keels divergent, starting from under the overlapped margins near the middle keel, and ending on the middle of the side of the scutellar process. *Elytra* regularly convex, sides beyond the cells narrow; cells large, wide, their inner nerve strong, not angled in the middle, the outer nerve slight; anterior margin narrow, with 1 row of small meshes. *Sternum* black. *Legs; thighs* brownish; *tibiæ* and *tarsi* yellowish-brown, end of the latter and the claws black.

Abdomen beneath, black.

Length, 1½ line.

Rare. One specimen taken in the Isle of Wight (*Power*); two by sweeping among underwood at Bexley, Kent, in May and June (*Scott*); and one in Mr. T. Marshall's collection.

Fieber says, "In sandy places under *Senecio Jacobea*."

Species 3.—MONANTHIA DUMETORUM.

MONANTHIA DUMETORUM, *H. Schf.* Wanz. iv, 57, t. 124, fig. 391 (1839); *Fieb.* Ent. Mon. 82, 25, t. 27, figs. 4—6 (1844); Europ. Hem. 125, 23 (1861).
TINGIS OXYACANTHÆ, *Curt.* B. E. xvi, pl. and fig. 741 (1839).

Cinnamon-brown, base of the *elytra* and across the scutellar process broadly whitish-brown; across the middle of the *elytra* a broad chocolate-coloured band; anterior margin of the *elytra* at the base with 2 rows, at the apex with 1 row of meshes.

Head black; *Crown* brown, depressed in the centre, from which springs a short spine, a long appressed spine on each side, black at the base, and 2 contiguous ones in front forming apparently but one. *Antennæ* thin, finely pubescent, reddish-yellow; 4th joint black. *Eyes* black. *Rostrum* reaching to the 3rd pair of coxæ, piceous; sides of the rostral channel yellow.

Thorax.—Pronotum in front narrow, elongated, sides sinuate, broad and rounded at the hinder angles; hood small, anterior margin in the middle slightly angulated and produced over the head; the overlapped side margins convex, at first narrow, then broader and of equal width throughout, the end broadly rounded, the reticulation with 2

rows of large depressed meshes; disk at the base of the hood depressed, black; the scutellar process with a transverse, pale, band-like shade, widening a little outwards, extending over the base of the elytra; the keels follow the undulation of the pronotum, the middle one extending over the hood, its apex with a long dark streak; on each keel at the highest part of the disk a brown streak. *Elytra;* sides gradually, roundly widened to the middle, then sinuate to the broadly rounded apex; anterior margin narrow, with 2 rows of transparent meshes to beyond the middle, then with 1 row of large meshes; in the middle the meshes are smaller and opaque; disk flat to the exterior of the cells, then vertical; across the middle a broad chocolate coloured band, extending across the anterior margin; cell nerves at the apex of the cell whitish; reticulation fine, the meshes larger posteriorly. *Sternum* finely punctured; sides of the rostral channel pale yellow; *Prosternum* reddish-yellow, piceous in the centre, *Meso-* and *Metasternum* black; margin and base of all the coxæ reddish-yellow. *Legs* reddish-yellow; *tarsi*, except the base, black.

Abdomen beneath, red-brown with a black line on each side, and clothed with extremely short, distant hairs.

Length, 1¼ line.

Varies considerably in colour from light cinnamon to chocolate-brown, the darker specimens being usually ♂, but in all there is the still darker transverse band of the elytra.

On old whitethorns; Glanville's Wootton, Dorset, May (*Dale*); Brighthampton, Oxon, May (*Stone*); Lee, Kent, June; Southampton Common, September, abundant (*Douglas*).

Species 4.—MONANTHIA QUADRIMACULATA.

ACANTHIA 4-MACULATA, *Wolff*, Ic. Cim. 132, t. 13, fig. 127, *a*, *b* (1804).
TINGIS — *Fall.* Hem. Suec. 144, 4 (1829).
— CORTICEA, *H. Schf.* Panz. F. G. 118, 22.
MONANTHIA 4-MACULATA, *Burm.* Handb. ii, 261, 6 (1835); *H. Schf.* Wanz. iv, 58, t. 125, fig. A (1839); *Fieb.* Ent. Mon. 81, 24, t. 7, figs. 1—3 (1844); Europ. Hem. 124, 22 (1861).
— (PHYSATOCHEILA) 4-MACULATA, *Flor*, Rhyn. Liv. i, 550, 9 (1860).

Cinnamon-brown, or lighter or darker, lighter across the base of the *elytra*, with a broad dark chocolate-coloured band beyond; an-

terior margin of the *elytra*, with 2 rows of transparent meshes at the base and beyond the band; on the band itself 4 irregular small, punctate, opaque meshes.

Head black finely punctured; *Crown* with 5 yellow spines, one appressed on each side next the eye, one in the middle projecting, and before it 2 conjoined so as to appear but 1. Antenniferous processes very small, reddish-yellow. *Antennæ;* 1st 3 joints reddish-yellow or brown; 4th oval, hairy, black. *Eyes* black. *Rostrum* light brown; the sides of the channel yellow-brown.

Thorax.—Pronotum; hood small, pale, slightly overhanging the head; the overlapped side margins equally broad throughout, convex, each with 4 rows of deep honeycomb meshes; disk on the highest part finely, posteriorly largely, reticulated; keels not deep, the middle one extends over the hood, the side ones start from its base, all at the middle and end with a black streak. *Elytra;* long-oval, very broad in the middle, the sides sinuate posteriorly; anterior margin very much rounded, somewhat broad, reflexed to the middle, in the middle brown, opaque, with 4 rows of indistinct, small meshes; at the base and posteriorly 2 rows of large transparent meshes with dark nerves; the margin at the apex brown; disk; base pale, the middle with a broad, chocolate-coloured, transverse band, which extends across the anterior margin; the cells flat; outside them suddenly deflected; cell-nerves at the base and apex whitish; the reticulation as far as the posterior end of the cells small, posteriorly gradually larger. *Sternum* light brown, sometimes with a black shade, finely punctured, the margins of the segments pale. *Legs* long, slender, reddish-brown; *tarsi*, the last joint and claws black.

Abdomen red-brown, with a dark line down each side.

Length, $1\frac{3}{4}$ line.

Rare. Glanville's Wootton, Dorset, October, on apple-trees (*Curtis, Dale*); and in Mr. Wollaston's collection.

Species 5.—MONANTHIA COSTATA.

TINGIS COSTATA, *Fab.* S. R. 152, 2 (1803); *Fall.* Hem. Suec. (*non* Panz., Réaum.) 143, 1 (1829); *Germ.* F. E. 18, 25.

MONANTHIA COSTATA, *H. Schf.* Wanz. iv, 55, t. 123, fig. 390 (1839); *Fieb.* Ent. Mon. 72, 15, t. 6, figs. 10—12 (1844); *Sahlb.* Geoc. Fen. 132, 2 (1845); *Fieb.* Europ. Hem. 123, 14 (1861).

— (TROPIDOCHEILA) COSTATA, *Flor*, Rhyn. Liv. i, 347, 8 (1860).

Pale ochreous, finely reticulated; *head* with 5 spines; hood long; *pronotum* very narrow in front, sides sinuate, the margins vertically reflexed.

Head small, black; *Crown* with 5 yellow spines, 2 in front very long, conjoined into one, 1 short, at their base and a very short obtuse one at the base of each eye. Antenniferous processes stout, obtuse, brownish-yellow. *Antennæ* short, stout, finely granulated and haired; 1st 3 joints brownish-yellow; 3rd stout; 4th short, obtuse, but little thicker than the 3rd, black. *Eyes* small, not prominent, black. *Rostrum* yellow.

Thorax.—Pronotum narrow and elongated in front; hood long, wide, rounded behind; sides sinuate, the margins not very broad, thick, vertically reflexed, in front sloping a little inwards, at the hinder angles prominent, suddenly rounded off; disk at each side of the hood black; keels strong. *Elytra* broad-oval; anterior margin broad, with 3 rows of meshes, at the base small, gradually larger beyond the middle to the apex, with 2 single brown streaks on the 1st 3rd, and 2 or 3 contiguous, transverse brown streaks before the middle and at the apex; disk deflected inwardly from the 1st nerve, which is highly raised, outside the cell broad, deeply deflected to the anterior margin, at the base with rather large reticulations, the meshes as far as the end of the cells small and regular, beyond the cells gradually larger to the apex; the cells clear, beyond them several isolated, short, brown streaks. *Wings* with a violet gloss. *Sternum* ochreous-brown; *Metasternum* black in front; rostral channel black, on the *metasternum* broad and flat, the margin pale ochreous. *Legs* brownish-yellow; *tarsi;* end of the 2nd joint and the claws black.

Abdomen beneath, finely punctured and haired, piceous-brown, apex brownish-yellow.

Length, nearly 2 lines.

Rare. A few examples taken by Mr. Dale at Langport, Somerset, in June; and by Dr. Power on the railway bank, Bushey, Herts, in May.

Species 6.—Monanthia reticulata.

Monanthia reticulata, *H. Schf.* Wanz. iii, 72, t. 95, fig. 288 (1836).
— ciliata, *Fieb.* Ent. Mon. 67, 10, t. 5, figs. 31—33 (1844); Europ. Hem. 122, 12 (1861).

Flat, broad, brownish-yellow, covered with long projecting hairs, which, on the circumference form a fringe.

Head black; *Crown* with 5 yellow projecting spines, viz., two at the base close to the eyes, one in the middle and two joined into one, in front. *Antennæ* with long projecting hairs; 1st 3 joints brownish-yellow, 4th black. *Eyes* black. *Rostrum* yellowish, the base and end black.

Thorax.—Pronotum; hood rhomboidal, the anterior margin projecting over the base of the head; side margins broad, rounded, projecting, reflexed, with 3 (almost 4) rows of large meshes, on which are a few brown streaks; disk, the keels strong and deep, the middle one going over the hood, following the contour of the pronotum and extending to the apex, viewed sideways several small meshes are visible; the scutellar process rounded at the apex, the meshes larger than on the disk. *Elytra;* disk flat, deflected outside the cells to the anterior margin; cell-nerves strong; the reticulation gradually larger posteriorly; anterior margin rounded, broad, reflexed, posteriorly gradually flatter, with 3 rows of large meshes streaked with black; the edge stout with brown-black spots. *Sternum* brownish-yellow sprinkled with white. *Legs* with long projecting hairs; *thighs* piceous; *tibiæ* and *tarsi* brownish-yellow, the end of the last joint of the latter and the claws black.

Abdomen finely haired, dark brown, the margins of the segments black.

Length, 2 lines.

Rare. One specimen from Mr. Wollaston's collection and one from Mr. Waterhouse's, without note of locality.

Fieber says the species is found in cut woods under the basal leaves of *Verbascum thapsus* and other woolly species of this genus of plants; also singly in sandy places under *Senecio Jacobea*, in the month of October.

Species 7.—Monanthia Cardui.

Cimex Cardui, *Lin.* F. S. 920 (1761); S. N. ii, 718, 21 (1767); *De G.* Mém. iii, 309, 38, t. 16, figs. 1—6 (1773).

Acanthia — *Fab.* E. S. iv, 77, 42 (1794); *Wolff*, Ic. Cim. 45, 42, t. 5, fig. 62 (1800).

— clavicornis, *Panz.* F. G. 3, 24.

Tingis Cardui, *Fab.* S. R. 125, 3 (1803); *Fall.* Hem. Suec. 1, 143, 2 (1829); *Zett.* Ins. Lap. 269, 2 (1840).

Monanthia — *H. Schf.* Wanz. iv, 61, t. 127, fig. A (1839); *Burm.* Handb. ii, 260, 2 (1835); *Am. et Serv.* Hém. 298, 2 (1843); *Fieb.* Ent. Mon. 61, 3, t. 5. figs. 1—8 (1844); *Sahlb.* Geoc. Fen. 131, 1 (1845); *Fieb.* Europ. Hem. 120, 4 (1861).

— (Phyllontocheila) Cardui, *Flor*, Rhyn. Liv. i, 345, 7 (1860).

Ochreous-gray, with small black spots; the projecting side margins of the *pronotum* and the anterior margin of the *elytra* with 3 rows of reticulation.

Head black with gray scales, between the eyes two small, short, grayish contiguous erect spines, and behind them another still smaller. *Antennæ* finely granulated and pubescent; 1st and 2nd joints black or piceous, or only at the apex piceous or yellowish; 3rd yellow or brown; 4th black. *Eyes* black. *Rostrum* reaching to the 2nd pair of coxæ, black.

Thorax.—Pronotum; the hood slightly overhanging the head; side margins broad, reflexed, of equal width throughout, except that at the hinder angles they are broadly rounded off; with 3 rows of large meshes, of which some of the posterior ones are black; the keels reticulated, of equal depth throughout, each with some of the apical meshes, and the central one with 2 of the central meshes black; the base of the keels and side margins usually with a black line; the reticulation fine on the front and disk, larger posteriorly. *Elytra;* anterior margin broad, reflexed, with 3 rows of large meshes, of which, in the middle, a few are smaller and black, and the blackness often extends inwards as far as the first nerve of the elytron; through the marginal network at regular intervals is also a series of black transverse streaks; disk flat, outside the cell vertical; the outer marginal nerve of the large cell with 2 or 3 black streaks and a similar streak at the apex of the cell; the reticulation gradually

larger from base to apex, some meshes irregularly black. *Sternum* black, the edges of the segments ochreous; *Prosternum* reticulated; *Meso-* and *Metasternum* punctate. *Legs* with short yellowish pubescence; *thighs* punctate-granulate, black, apex yellowish; *tibiæ* finely granulate, yellowish; *tarsi* yellowish, end of the last joint and the claws black.

Abdomen beneath, black, finely punctured, and with yellow pubescence.

Length, 1½ line.

Common on thistles in the autumn, and in moss during winter and spring.

Species 8.—MONANTHIA AMPLIATA.

MONANTHIA AMPLIATA, (*Fieb.*) *H. Schf.* Wanz. iv, 62, 397 *a* (1839); *Fieb.* Ent. Mon. 59, t. 5, figs. 10, 11 (1844); Europ. Hem. 120, 3 (1861).

Ochreous-gray, with black spots; side margins of the *pronotum* and anterior margins of the *elytra* with 5 rows of meshes.

Head black, with yellowish pubescence; *Crown* with 3 posterior equidistant, subprocumbent spines, anterior to these are 2 smaller spines close to each other, and joined at the apex; antenniferous processes small, short. *Antennæ* pilose; 1st joint piceous; 2nd and 3rd reddish-yellow; 4th black. *Eyes* black. Underside, at the base of the antennæ, and on the margin of the rostral channel, ochreous.

Thorax.—Pronotum; hood large, convex, projecting considerably over the head; side margins almost flat, rounded, very wide and prominent in front, rather suddenly narrowed to a point at the hinder angles, with 5 rows of small meshes, more or less variegated with black streaks; disk delicately reticulated, the scutellar process with larger meshes; keels with a black streak on the edge beyond the middle, the dark colour sometimes spreading down on to the disk. *Elytra;* anterior margin very broad, nearly flat, with 5 rows of meshes, transversely streaked with black; before the middle, where the meshes are smaller, the connection of the streaks forms a spot; sometimes the whole of the margin is similarly maculated; disk flat; exterior to the cell vertical; finely reticulate, posteriorly with larger meshes, and black in patches; the nerves and apex of

the cells with black streaks. *Sternum;* the margin of each segment ochreous; *Prosternum* reticulated; *Meso-* and *Metasternum* coarsely punctured. *Legs; thighs* granulated, piceous; apex reddish-yellow; *tibiæ* and *tarsi* reddish-yellow; end of the 2nd joint of the latter, and the *claws* black.

Abdomen beneath, black, with distant, short, yellowish pubescence.

Length, 2 lines.

In damp places, at the roots of grass, and under leaves. Lee, February and April; Chislehurst, May; Brighthampton, Oxon, April (*S. Stone*).

Genus 2.—DEREPHYSIA, *Spin.*

Oval, the upper surface with transparent reticulation.

Head transverse; *Crown* convex, in front with 2 very short, projecting spines; *Face* arched, subvertical; antenniferous processes very short; obtuse. *Antennæ;* 1st joint short, narrow at the base; 2nd $\frac{1}{2}$ the length of the 1st, obconic; 3rd very long, filiform, a little thinner than the others; 4th about $\frac{2}{3}$ths the length of the 3rd, long-fusiform, the basal $\frac{1}{2}$ thinnest. *Eyes* small, not prominent. *Rostrum* thin, reaching across the 2nd segment of the abdomen, the base in a deep channel, of which the sides are much produced, and finely reticulated.

Thorax.—Pronotum rhomboidal; hood projecting far over the head, very convex, compressed, helmet-formed, with a strong nerve on the middle, and two rows of meshes on each side; side margins reticulated, thin, much reflexed, very broad, in front projecting, obtusely pointed, inwardly joined to the hood, the edge rounded to behind the hinder angles of the pronotum; disk broad, finely punctured, transversely convex in the middle, deflected before and behind; keels 1 or 3, straight, each with a single row of straight, transverse reticulations; the middle keel much deeper than the side keels, curving from the hood to the apex of the scutellar process. *Elytra* wide, the sides within the anterior margin slightly sinuate posteriorly; anterior margin broad, regularly rounded, greatly reflexed; disk ridged, being deeply deflected inwards from the 1st nerve, which is elevated, so that down the centre of the *elytra* is a wide, deep furrow; outside the 1st nerve the deflection is nearly vertical; the meshes large, on the disk each one concave, posteriorly scarcely

larger, but flat. *Sternum* with a rostral channel, widest posteriorly, the sides slightly produced; *Mesosternum* convex; *Metasternum* depressed in the centre. *Legs* slender.

Species 1.—Derephysia foliacea.

Tingis foliacea, *Fall.* Hem. Succ. 149, 12 (1829); *H. Schf.* Panz. F. G. 118, 18—; Wanz. iv, 70, 7, t. 129, fig. D (*head and antennæ*), t. 130, figs. M & N (*pronotum*) (1839).

Derephysia — *Fieb.* Ent. Mon. 99, 1, t. 8, figs. 23—27 (1844); *Sahlb.* Geoc. Fen. 135, 1 (1845); *Fieb.* Europ. Hem. 128, 1 (1861).

Brown, or black-brown, shining; reticulation transparent; side margins of *pronotum* and *elytra* with 2 rows of large meshes; disk of *pronotum* with 3 keels; apex of scutellar process pointed.

Head dark brown, finely punctured. *Antennæ* red-brown; 1st and 2nd joints, and end of the 4th dark brown; 3rd and 4th closely, finely haired. *Eyes* black. *Rostrum* brownish-yellow. Underside somewhat strongly punctured.

Thorax.—Pronotum; side margins projecting in front, on each side of the head, in an obtuse point, concave on the inner side; anteriorly with 3, posteriorly with 2 rows of large meshes, ending at the hinder angles with a single mesh; disk with 3 slightly divergent keels, the middle one much deeper than the side ones, arising on the hood and arched to the apex of the scutellar process, which is pointed, and slightly raised; the middle of the disk black, finely, deeply punctured; the scutellar process yellowish, the base brown with fine meshes, posteriorly with a few large meshes. *Elytra;* anterior margin broadest beyond the middle, with 2 rows of large, irregular meshes, sometimes in the middle with only 1 row; disk with 2 rows of irregular meshes, the vertical outer side, inner margin, and apex, with a single row of large quadrangular meshes. *Sternum* brown, the sides sometimes blackish, finely punctured. *Legs* brown-yellow.

Abdomen beneath, brown.

Length, 1¼ line.

Taken casually by sweeping during autumn; abundant at Mickleham, in August, in ivy growing on palings.

Genus 3.—DICTYONOTA, *Curt.*

Oval, transparently reticulated on the upper surface.

Head; from the side half-oval, from above nearly 5-sided; *Crown* in front with 2, parted, projecting spines; antenniferous processes pointed; *Face* vertical. *Antennæ* stout; 1st joint short, cylindrical; 2nd shorter, obconic; 3rd very long, densely clothed with strong hairs; 4th conical, about as long as the 1st and 2nd together, with finer hairs than the 3rd. *Eyes* prominent. *Rostrum* reaching to the end of the metasternum, thin, 4-jointed, the joints in length subequal; rostral channel deep, narrow, the sides thin, raised and reticulate.

Thorax.—*Pronotum* subrhomboidal, the fore part shorter than the scutellar process; anterior portion with a hood, short, rounded, or obtusely pointed in front; side margins broad, projecting, rounded, transparent, in front joined to the sides of the hood; disk transversely convex before the hinder angles, deflected in front and behind, and depressed at the base of the scutellar process; with 3 straight, deep, thin, parallel keels, the middle one deeper behind than in front, each with 1 row of large meshes. *Elytra* broad, oval, longer and wider than the abdomen; sides posteriorly, within the anterior margin, slightly sinuate; anterior margin broad, rounded, greatly reflexed; disk with a lanceolate, deeply concave cell, $\frac{2}{4}$ the length of the elytra, from its lower end a nerve goes to the apex of each elytron; the disk outside the cell suddenly deflected, almost vertical. *Sternum* with a rostral channel, widest and deepest on the metasternum. *Legs* rather long; *tarsi*, 2-jointed.*

Species 1.—DICTYONOTA CRASSICORNIS.

TINGIS CRASSICORNIS, *Fall.* Mon. Cim. 38, 8 (1807); Hem. Suec. 147, 10 (1829).

DICTYONOTA — *Curt.* B. E. iv, fig. 154 (1827); *Fieb.* Ent. Mon. 92, 1, t. 7, figs. 42—47 (1844); *Sahlb.* Geoc. Fen. 134, 1 (1845); *H. Schf.* Wanz. ix, 157 (1850); *Flor*, Rhyn. Liv. i, 358, 1 (1860); *Fieb.* Europ. Hem. 127, 3 (1861).

* Curtis ("B. E.," p. 154) erroneously says that the *tarsi* are 3-jointed.

Tingis pilicornis, *H. Schf.* Panz. F. G. 118, 17 (1830).
Piesma marginatum, *Burm.* Handb. ii, 258, 3 (1835).
Dictyonota pilicornis, *H. Schf.* Wanz. iv, 74, t. 129, fig. 401 (1839).
Tingis (Derephysia) pilicornis, *Kolen.* Mel. Ent. vi, 14, 215 (1857).

Black; the hood, margins of *pronotum*, *elytra*, and their margins, pale gray-ochreous with brown reticulations; the hairs of the *antennæ* long, projecting; the side margins of the pronotum in front straight, projecting, and with 3 or 4 rows of meshes.

Head finely granulated; the 2 frontal spines long, thick, contiguous but separate; antenniferous processes thick, crooked, pointing outwards. *Antennæ*, 1st and 2nd joints smooth; 3rd and 4th densely clothed with projecting hairs, which are very thick at the base. *Eyes* black. Underside of head black-brown, with deep reticulations which are larger on the whitish sides of the rostral channel. *Rostrum* brown.

Thorax.—Pronotum; hood obtusely pointed; side margins wider in front than behind, in front straight, projecting forward, at the sides broadly rounded to behind the hinder angles, anteriorly with 3 or 4, posteriorly with 2, rows of large irregular meshes; disk in the middle black, punctured, the rest pale gray-ochreous; the edge of the keels brown. *Elytra*; anterior margin rounded, broad, much reflexed, with 2 rows of meshes, the inner one rather the larger; the meshes of the disk of nearly equal size throughout. *Sternum* with large deep punctures, the edge of the rostral channel brown. *Legs*; *thighs* piceous; *tibiæ*, *tarsi* and *claws* brown, the last joint of the *tarsi* piceous at the apex.

Abdomen black, delicately, transversely crenate.

Length, $1\frac{1}{2}$ line.

Among grass and moss in dry, sandy places; Eltham and Plumstead, July to September; under a stone near Bognor, Sussex, August (*Curtis*).

Species 2.—Dictyonota strichnocera.

Dictyonota Eryngii, *Curt.* B. E. iv, p. 154 (1827), non *Latr.*
— crassicornis, *H. Schf.* Wanz. iv, 74, t. 129, fig. B, *head* (1839), non *Fall.*
— strichnocera, *Fieb.* Ent. Mon. 95, 3, t. 8, figs. 4—7 (1844); Europ. Hem. 127, 6 (1861).

Black, the hairs of the *antennæ* short not projecting; the side margins of the *pronotum* rounded throughout, anteriorly with 2 rows, posteriorly with 1 row of meshes; the reticulation throughout brown.

Head granulated; the orbit of the eyes and 2 short, distant frontal spines yellow. *Antennæ;* 1st and 2nd joints granulated, the 3rd densely clothed with short, thick, forwardly directed, appressed hairs; 4th with finer hairs. *Eyes* brown or black. *Rostrum* dark brown; sides of the rostral channel whitish.

Thorax.—Pronotum; hood rounded in front, pale ochreous, with large meshes; side margins rounded throughout, in front rather broadest, with 2 rows of meshes, on the inner row the largest; posteriorly with 1 row of meshes; disk on the raised portion black, with fine deep punctures; the scutellar process reticulated, across its base a broad whitish band, posteriorly the meshes are larger and the reticulation brown; the middle keel deeper than the side keels, its edge straight, not following the contour of the disk; all the keels pale ochreous, with transverse brown meshes. *Elytra* long-oval, transparent, pale ochreous, at the base whitish, with dark-brown, irregular reticulation, the meshes gradually larger beyond the middle; anterior margin with 2 rows of large meshes, at the apex 1 row; sometimes in places the indication of a 3rd row, at other times but 1 row in the middle; but the 2 *elytra* are often not alike in this respect. *Sternum* with deep round punctures; the margins of the segments yellowish. *Legs; thighs* black, apex yellow, *tibiæ* yellowish-brown, base dusky; *tarsi* black.

Length, nearly 1½ line.

Rare. Under moss in dry, bare places, and among furze bushes; Addington Hills, Surrey; Dartford Brent, August; Abergavenny, October (*Scott*).

Genus 4.—Campylostira, *Fieb.*

Oval or elliptic. Hood wanting.

Head viewed sideways nearly oval, in front obtuse; *Crown* narrow, prominent, in front with 2 very short, strong, conjoined, projecting points; antenniferous processes very short, obtuse; *Face* vertical. *Antennæ* short, stout; 1st joint thick, cylindrical, reaching

as far as the front of the head; 2nd ½ the length of the 1st, obconic; 3rd stout, much longer than the 1st and 2nd together; 4th subfusiform. *Eyes* rather large, prominent. *Rostrum* reaching to the end of the metasternum; thin, 2nd joint longest; rostral channel narrow, deep, the sides raised.

Thorax.—Pronotum nearly equally 5-sided; sides divergent from the anterior to the hinder angles, then convergent to the apex; scutellar process very short; hood wanting; anterior margin broadly tumid, sub-reticulate; side margins projecting, reflexed, with 1 or more rows of meshes; scutellar process short; disk with 3 keels, the middle one extending the whole length, the side ones abbreviated in front. *Elytra* longer than the abdomen, convex; discoidal cells long, narrow, sub-elliptic, pointed at each end; *Clavus* partly visible. *Sternum;* the segments with parallel margins; the rostral channel but little widened on the metasternum, its sides slightly raised.

Species 1.—CAMPYLOSTIRA VERNA.

TINGIS VERNA, *Fall.* Hem. Suec. 147, 9 (1829).
MONANTHIA VERNA, *H. Schf.* Wanz. iv, 64, t. 127, fig. 398 (1839).
CAMPYLOSTEIRA — *Fieb.* Ent. Mon. 45, 4, t. 3, fig. 38 (1844).
CAMPYLOSTIRA — *Fieb.* Europ. Hem. 132, 5 (1861).

Light-brown, elliptic.

Head black; antenniferous processes brown. *Antennæ*, 1st 3 joints yellow-brown; 4th black, finely haired, the lower half yellow-brown. *Eyes* black.

Thorax.—Pronotum black, all the margins brown; side margins sinuate, in front broadest, with 2 rows, at and beyond the middle with 1 row, of small, rounded meshes; hinder angles rounded; scutellar process pointed, the sides rounded and finely reticulate; disk finely punctured, broadly convex in the middle, deflected before and behind; in front, behind the anterior margin, depressed; keels shallow, gradually a little deeper, rounded posteriorly. *Elytra* long oval; anterior margin much reflexed, narrow, a little widened at the base and beyond the middle, with 1 row of small meshes; inner margins straight, not touching each other at the base, but gradually approximate and overlapping each other, leaving at the base a long, triangular part of the abdomen visible; disk highest at the outer cell-nerve, the cell ⅔rds the length of the elytron, its sides for the greater

part nearly parallel, with 2 rows of meshes inside; outside the cell 2 rows of meshes smaller than those in the cell; the inner margin with 1 row of gradually larger meshes, beyond the cell 2 rows of large meshes. *Legs* yellowish-brown.

Length, 1 line.

Rare. A single specimen from Mr. Wollaston's collection, without note of its locality.

Species 2.—Campylostira brachycera.

Orthosteira brachycera, *Fieb.* Ent. Mon. 43, 2, t. 3, figs. 27—32 (1844).
Campylostira — *Fieb.* Europ. Hem. 132, 3 (1861).

Oval, dark brown, wingless.

Head black or black-brown; antenniferous processes usually light red-brown. *Antennæ*; the 1st 3 joints ferruginous, the 3rd scarcely thinner than the 2nd, filiform; 4th ½ as long as the 3rd, delicately haired, basal ½ ferruginous, apical ½ black, base not thicker than the 3rd joint. *Eyes* black. *Rostrum* yellowish.

Thorax.—Pronotum; side margins slightly widest in front, projecting a little forwards, the angle rounded; edge straight, posterior angle prominent but rounded; disk flat, depressed, especially in front, finely punctured throughout; the keels low, straight, parallel, distant, the middle one highest; scutellar process short, the sides rounded to the obtuse apex. *Elytra* not meeting at their inner margins, except at the apex, where they slightly overlap, leaving an elliptic opening through which the abdomen is visible; anterior margin very narrow, only visible at the base and apex, with 1 row of very small meshes; disk ridged, being greatly deflected on each side of the outer cell-nerve which is highly raised; the cell long, narrow, elliptic, pointed at each end, with 2 rows of meshes; outside of the cell 2 rows of meshes; between the cell and the inner margin 1 row of meshes; behind the cells 2 rows of larger meshes. *Sternum* black, with a whitish gloss, finely punctured. *Legs* yellowish-brown.

Abdomen beneath brown.

Length, ¾—1 line.

This may possibly prove to be the undeveloped form of *C. verna.*

Local. In moss on a sunny slope at Sanderstead, March, plentiful; Micklcham, September.

Genus 5.—ORTHOSTIRA, *Fieb.*

Short, oval, reticulated; the *elytra* generally abbreviated beyond the large cell, but still longer than the abdomen and rounded posteriorly; the *wings* rudimentary; when the *elytra* are fully developed they are much longer than the abdomen, the form is a longer oval, and the wings are present.

Head broad, 4-sided; *Crown* in front with 2 short, central, projecting, divergent or straight spines and one before each eye, within which the antennæ are inserted; *Face;* middle lobe rather prominent. *Antennæ;* 1st joint short, thick; 2nd ½ the length of the 1st; 3rd thin, much longer than the 1st and 2nd together; 4th subfusiform. *Eyes* large, prominent. *Rostrum* thin, reaching across the metasternum, 2nd joint longest.

Thorax.—Pronotum short, rhomboidal; hood small, convex, overhanging the head; side margins projecting, with 2 or 3 rows of transparent meshes; disk with 3 keels, each with 1 row of meshes, or with the side keels wanting. *Elytra;* anterior margin reflexed, with one or two rows of transparent meshes; disk with a long, curved lanceolate cell, the upper end pointed and turned outwards, the lower end turned inwards, with a single nerve extending posteriorly beyond it; the cell-nerves strong and raised. In the undeveloped form, which is that generally met with, the elytra have their inner margins straight and not overlapping; when the elytra are developed fully, the portion below the cells is widened inwardly, overlapping each other, and the outer sides are posteriorly sinuate. *Sternum;* the segments with parallel margins, the rostral channel but little widened posteriorly, its sides raised. *Legs* short, thin.

Species 1.—ORTHOSTIRA CONCINNA.

ORTHOSTIRA CONCINNA, (*Fieb.*) *Doug. & Scott,* Ent. Ann. 143, fig. 5 (1863).

Broad-oval, luteous; *pronotum* deeply depressed and black in front, side margins with 3 rows of small, rounded, open meshes; *elytra* with small black spots.

Head black; frontal spines stout, obtuse, divergent, brown; antenniferous spines stout, short, obtuse, deflected, light brown at the apex. *Antennæ*; 1st 2-joints brown, 3rd filiform, slightly thickened, but not bulbous, at the base, yellow-brown or ferruginous; 4th subfusiform, short, obtuse, black; 3rd and 4th with fine short hairs. *Eyes* red-brown. *Rostrum* light brown, the end black; sides of the rostral channel broadly pale yellow.

Thorax.—Pronotum; hood in front rounded, sides concave or sinuate, extending narrowly to the anterior angles of the pronotum and joined to the side margins, the top with a fine keel, each side with 9 or 10 deep, round punctures in 4 rows; side margins reflexed, of equal breadth throughout, in front projecting forwards, the outer angle obtuse, the edge slightly curved; posterior angles projecting, broadly rounded, almost opaque, the meshes small, oval, in 3 rows; disk on the 1st 3rd with a deep, flat, transverse, black depression, quadrangular, or rather of the form of 2 triangles with their base outwards and their truncate apices joined together; the scutellar process slightly convex, raised over the base of the elytra, its apex subacute; the keel deep and with a single row of meshes on the depressed portion of the pronotum, shallow on the hood and scutellar process. *Elytra* broad, oval, the base wider than the pronotum, with the angles rounded; anterior margin reflexed, widest and flattest beyond the middle, with small, rounded, transparent meshes, in 2 rows to the middle (where sometimes is only one row), then in 3 oblique rows, and towards the apex in 2 rows; inner margins straight, not overlapping each other; disk flat from the outer margin of the cell to the inner margin of the elytron; outside the cell broad, greatly deflected to the anterior margin; cells about $\frac{2}{3}$rds the length of the elytra, the nerves strong, raised; the apical nerve strong, curved slightly inwards, not quite reaching the apex of the elytron; the reticulation in small, rounded meshes, between the cell and inner margin in 2 rows, within the cell in 5 rows, outside the cell in 4 or 5 rows; posterior to the cell the meshes are scarcely larger and in longitudinal rows. Over the elytra, the margin often included, are irregularly scattered, small black spots, which sometimes become confluent and form blotches. *Sternum* light brown, with distinct, deep punctures, a large spot at the base of each coxa, and the sides of the rostral channel pale yellow; *Legs; thighs* piceous, base and apex brown or ferruginous; *tibiæ* ferruginous; *tarsi* piceous.

Abdomen beneath shining, brown or black-brown.

Length, $\frac{7}{8}$—1 line.

In moss on the trunks of oak trees, in winter and spring; Scarborough (*T. Wilkinson*); Darenth Wood.

Species 2.—Orthostira cervina.

Tingis cervina, *Germ.* F. Ins. Europ. 18, 22.
Monanthia — *H. Schf.* Wanz. iv, 26 & 53, t. 118, fig. 375, t. 129, fig. G (1839).
Orthosteira — *Fieb.* Ent. Mon. 48, 2, t. 4, figs. 1—3 (1844); *Sahlb,* Geoc. Fen. 129, 1 (1848).
Monanthia (Orthosteira) cervina, *Flor,* Rhyn. Liv. i, 341, 5 (1860).
Orthostira cervina, *Fieb.* Europ. Hem. 130, 2 (1861).

Light or dark brown; side margins of *pronotum* reflexed, broad, parallel, with 3 rows of meshes; discoidal side keels curtailed at base; anterior margins of the *elytra* broad, with 2 rows of large meshes. The reticulation throughout stout and dark.

Head brown or black; frontal spines long, strong, pointed, divergent, apex yellowish-brown; antenniferous spines long, strong, projecting outwards, apex usually yellowish-brown. *Antennæ;* 1st 3 joints yellow-brown or ferruginous; 3rd finely granulated, not thickened at the base, blackish on its anterior 3rd; 4th long-fusiform, base not thicker than the 3rd, black, with fine short hairs. *Eyes* brown. *Rostrum* light brown, apex black; sides of the rostral channel yellowish.

Thorax.—Pronotum broad, short; hood in front obtuse, the sides sinuate, narrowly extended along the anterior margin of the pronotum and joined to the side margins, each side with 3 rows of deep meshes; side margins broad, reflexed, on the edge straight, angles obtuse, the anterior ones a little produced forwards, the posterior ones right angled; disk at the base of the hood depressed, smooth, black; scutellar process short, its apex acute; keels 3, straight, the middle one strong, deep, horizontal on the edge from the front of the hood to the apex of the scutellar process, with 7 transverse, brown meshes largest in the deepest part of the discoidal depression; side keels shallow, with 5 transverse meshes, divergent, arising abruptly in the depression and not joined to the hood, highest in front but also prominent at their exit on the hinder side margins; the

middle of the disk punctured, the scutellar process with rather small meshes. *Elytra* broad, oval, convex, the base wider than the pronotum at its hinder angles; anterior margin rounded at the base, broad, regularly rounded, but a little narrower in the middle, deeply reflexed throughout, with 2 rows of large irregular transparent meshes, sometimes dark brown at the middle; inner margins straight, not overlapping, rounded off and divergent at the apex; disk with large, subequal meshes throughout; cells extending $\frac{5}{6}$ths of the length of the elytra, concave, with 3—4 rows of meshes; nerves strong, raised, the outer one sinuate, the inner one straight, the apical nerve very short, pointing inwards; outside the cells 3 or 4 rows of meshes. *Sternum* brown, the margins of the segments and the sides of the rostral channel yellowish. *Legs* yellowish-brown.

Abdomen beneath brown.

Length, 1—1¼ line.

Rather scarce and local. In moss, on a bank under bushes, Coombe Hurst, Croydon, May.

Species 3.—Orthostira obscura.

Monanthia pusilla, *Burm.* Handb. ii, 262, 8 (1835) (non *Fall.*).
— obscura, *H. Schf.* Wanz. iv, 23, t. 118, fig. 372 (1839).
Orthosteira — *Fieb.* Ent. Mon. 54, 7, t. 4, figs. 22—25 (1844); *Sahlb.* Geoc. Fen. 130, 4 (1848).
Orthostira — *Fieb.* Europ. Hem. 131, 7 (1861).

Black-brown, ovate; side margins of the *pronotum* pale brown, with darker reticulations; in front with 2 rows, posteriorly with 1 row of meshes. (Exceptionally there are 3 rows in the front.)

Developed Form.—Head black, finely punctured; the 2 frontal spines brown, short, obtuse, straight; antenniferous spines small, obtuse. *Antennæ;* 1st 3 joints light yellowish-brown, the 1st sometimes darker; 3rd filiform, at the base abruptly swelled into a bulb as thick as the 2nd; 4th short-fusiform, black. *Eyes* red-brown. *Rostrum* piceous, 1st joint luteous; sides of the rostral channel luteous.

Thorax.—Pronotum; hood whitish-brown, projecting far over the head, in the middle a keel, on each side 2 rows of large, deep reticulation, the base prolonged narrowly on the anterior margin of the pronotum: sides rounded at the anterior angles, side margins pale

brown, in front widest, projecting forwards, gradually narrower posteriorly; outer edge straight, but curved round the hinder angles, with 2 rows of subquadrate meshes, of which the inner ones are smallest, beyond the middle with a single row; disk, in the middle transversely convex, and deflected before and behind; as far as in a line with the hinder angles, black, finely punctured; the scutellar process light brown, with gradually larger reticulations, the apex rounded; keels 3, light brown, low, straight, the middle one longest and deepest, the side keels divergent, their base joining the hood on the middle of each side, each keel with 7 transverse brown nerves, leaving 8 quadrate, transparent cells. *Elytra;* within the anterior margin, sinuate beyond the middle, round the circumference regularly long-oval, broad posteriorly; anterior margin reflexed, with a single row of meshes, small to the middle, larger beyond, where the margin itself becomes wider; disk, the large cells broad, short, slightly concave, lanceolate, the outer side sinuate; cell-nerves prominent, the exterior apical nerve long, but not reaching the posterior margin; the reticulation in the cells in 5 rows of equal sized meshes; outside the cells deflected to the anterior margin, the reticulation rather smaller and less distinct, in about 4 rows; posterior to the cells the reticulation gradually larger. *Sternum* brown, finely punctured, the margins of the segments and sides of the rostral channel whitish; *Legs; thighs* black, the apex red-brown, constricted; *tibiæ* yellow-brown; *tarsi;* 1st joint yellow-brown, 2nd black.

Abdomen beneath shining, dark brown.

Length, 1 line.

Undeveloped Form.—The reticulation of the side margins of the *pronotum* in 2 rows throughout, ending in a single mesh at the hinder angles. The *elytra* are shorter and rounder than in the developed form; the sides, within the margin, not sinuate; the anterior margins reflexed to the apex, exteriorly rounded, not sinuate; the inner margins straight, not overlapping each other; the outer cell-nerve more nearly straight, and the apical nerve goes nearly to the apex of the elytra.

Length, $\frac{3}{4}$ line.

In both developed and undeveloped forms, the ♂ is shorter and narrower than the ♀, and the apex of the *elytra* more acute.

Common in the south of England, in moss on the ground, on walls and tree-stumps, in spring, autumn, and winter; Killarney, Ireland (*Wollaston*).

SECTION 7.—*HEBRINA.**

FAMILY 1.—HEBRIDÆ.

Genus 1.—HEBRUS, *Curt.*

Small, stout, long-oval.

Head long, deflected in a curve; above 5-sided, sideways triangular; *Crown* long, clypeate, broad, convex, with a slight longitudinal channel down the centre; sides before the eyes widened and flattened; clypeus produced over the base of the antennæ, the margin roundly cut out for their extension; *Face* short, broad, vertical. *Antennæ* 6-jointed, inserted on a tubercle low on the sides of the head; 1st and 2nd joints stout, (the 1st stoutest) clavate, slightly curved, 1st long, 2nd $\frac{2}{3}$rds the length of the 1st; 3rd and 5th very minute; 4th as long as the 1st, filiform; 6th longer than the 4th, long and thin-fusiform. *Eyes* moderate, hemispherical, prominent, facets large. *Ocelli* small, distant, inserted on each side of the raised crown in a line with the middle of the eyes. *Rostrum* reaching to the 3rd pair of coxæ, subulate, 4-jointed; 1st and 2nd joints very short, 3rd and 4th very long; rostral channel wide, sides raised and posteriorly end in a point projecting a little over the prosternum.

Thorax.—Pronotum deflected, haxagonal, broader than long; anterior margin incrassated; sides widely divergent to the rounded and prominent hinder angles, but deeply constricted before the middle; hinder sides rounded; posterior margin straight; disk in the middle with a short, broad, longitudinal channel, of which the sides are somewhat bluntly raised, on each side of it anteriorly, a deep fovea, whence a depression extends to the anterior angles; hinder portion flat-convex, higher than the anterior part. *Scutellum* short, broad, reversed trapeziform, posteriorly raised, concave, with a central longitudinal keel. *Elytra* very broad posteriorly; *Corium* on its anterior margin not $\frac{1}{2}$ the length of the elytron, on the inner margin shorter; posterior margin straight, oblique; the breadth is about $\frac{1}{3}$ that of the elytron, anterior and inner margins with an incrassated nerve; the region of the *Clavus* wide, membranous,

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posteriorly not perceptibly separated from the membrane; *Membrane* very broad, thin, without perceptible nerves. *Wings* with 1 triangular, basal cell, and 1 nerve at its end. *Sternum* flat, with a wide rostral channel. *Legs* proportionally long and stout; posterior *thighs* curved; *coxæ* on each segment of the sternum very wide apart, widest on the 3rd; *tarsi* trimerous; 1st joint very small; 2nd longer, stout, the end oblique, clasping the 3rd, which is long, stout, thickest at the end, rugose and hairy, with 2 very short, curved claws; the 2nd and 3rd joints are so closely united as to appear to form but 1 long, ovate joint.

Abdomen beneath convex, but flattened in the middle; apex rounded; *Connexivum* narrow. *Genital segments* not visible from above, beneath projecting through a circular opening in the last abdominal segment; in the ♂, 2; the first short, annular; the 2nd at the base cylindrical, but then rapidly narrowed to a point, which is curved upwards; in the ♀, 3; the 1st small, the 2nd and 3rd cleft longitudinally in the middle, but not parted.

This genus has several apparent relationships, and has been variously placed by authors; but on the whole, it appears to have the nearest affinity to the sections between which we, following Flor, have placed it.

Species 1.—HEBRUS PUSILLUS.

LYGÆUS PUSILLUS, *Fall.* Mon. Cim. 71, 19 (1807); Hem. Suec. 65, 27 (1829); *Germ.* F. Ins. Europ. 15, 11.
HEBRUS PUSILLA, *Curt.* Ent. Mag. i, 199 (1833).
— PUSILLUS, *Westw.* An. Soc. Ent. France, iii, 652, pl. 6, fig. 6 (1834); *Burm.* Handb. ii, 214, 1 (1835); *Am. et Serv.* Hém. 294, 1 (1843); *Flor*, Rhyn. Liv. i, 374, 1 (1860); *Fieb.* Europ. Hem. 104, 1 (1861).

Black, dull, with fine, short, shining white hairs; *Clavus* at the base snow-white; *Membrane* with 3 long white spots in a triangle.

Head finely punctured; margin of the *Clypeus* whitish; underside yellow-brown, sides of the rostral channel ochreous. *Antennæ* with short hairs, black; 1st joint yellow-brown. *Eyes* piceous; *Ocelli* brown. *Rostrum* yellow-brown.

Thorax.—Pronotum posteriorly brown. *Elytra; Corium* black,

with close, short, yellowish hairs; in the middle a longitudinal yellowish line; claval region on the basal ⅓ snow-white, posterior ⅓ blackish; *Membrane* fuscous; rather paler posteriorly, with 3 long, inwardly pointing, white spots; 1 under the apex of the corium, 1 near the end of the inner margin, and 1 forming a triangle with the others. *Legs* yellow-brown; *tarsi;* 3rd joint piceous-black; *claws* yellow-brown.

Length, 1 line.

On *Lemna*, and other aquatic plants; June and July, Plumstead Marshes; Isle of Wight (*G. Lewis*); Southgate (*F. Walker*); West of England (*Dale*).

Section 8.—*CORTICICOLINA.**

Family 1.—ANEURIDÆ.

Genus 1.—Aneurus, *Curt.*

Very flat and thin, long-oval, smooth.

Head very broad, 4-sided, widened behind the eyes and then suddenly, obliquely narrowed to a short neck; *Face;* central lobe very prominent, long, broad, convex, rounded in front; side lobes short, narrow, pointed; antenniferous processes short, broad, the end straight. *Antennæ*, the 1st and 2nd joints petiolate; 1st thick, reaching a little beyond the end of the face; 2nd about the same length, oval; 3rd rather more than half the length of the 4th, apex straight; 4th long, fusiform-clavate, as long as the 2nd and 3rd together. *Eyes* moderate, semiglobose, rather prominent. *Rostrum*, not half the length of the head, 2nd joint broad, triangular; 3rd conical, pointed; rostral channel widened into a triangle, then posteriorly contracted.

Thorax.—Pronotum twice as broad as long; indistinctly 6-sided, anterior margin half the length of the posterior margin, concave, deflected forward; sides on the 1st ⅔rds a little concave, divergent, then rounded, the last 3rd almost straight or a little convergent to the acute posterior angles; posterior margin very slightly concave; disk in front, within the anterior margin, transversely raised in the

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middle, and with a wide, transverse depression, deepest on the sides. *Scutellum* large, broad, base straight, sides and apex rounded in a continuous curve. *Elytra* laid over each other within the connexivum, not so long as the abdomen; base narrow; anterior margin nearly straight, a little widened and sinuate at the base; *Corium* very short, sub-triangular, merging into the broad membrane; close to the base and anterior margin a lanceolate, concave cell, from the inner side of which a nerve extends posteriorly and is lost in the membrane; between the cell and the nerve a furrow which gradually becomes shallower; below the scutellum a transverse depression extends between the nerves on each elytron. *Sternum* depressed in the region of the coxæ, the segments quadrangular. *Legs; thighs* clavate; *tibiæ* angulated, widened to the apex; *tarsi;* 1st joint very small, 2nd widened to the apex.

Abdomen; Abdominal segments above and beneath, in both sexes, 6 visible; all except the 1st long, the 1st 4 with straight margins; 5th on the posterior margin slightly concave; 6th above, reflexed, convex in the middle, its posterior margin deeply concave; in the ♂, the 6th segment beneath, is deflected, convex in the middle, posteriorly, deeply, transversely crenate, the posterior margin nearly straight; in the ♀, the 6th segment, above, has the posterior margin less deeply but more widely concave than in the ♂, the margin of the excision thickened and raised; on the underside flat, posteriorly crenate as in the ♂; the posterior margin slightly produced in the middle; *Connexivum* very broad, horizontal, the inner side straight, outer side rounded.

Genital segments. In the ♂, above and beneath, 2 only are visible —one, long, broad, convex, rounded at the end, projects far beyond the end of the abdomen; the 2nd represented by a very small obtuse point at each side of it. In the ♀, above, the excision on the posterior margin of the 6th abdominal segment is filled by the 1st genital segment, which is convex on the upper surface, and rounded behind; beneath, only the narrow truncate apex of the last segment is visible.

Species 1.—ANEURUS LÆVIS.

ACANTHIA LÆVIS, *Fab.* E. S. iv, 73, 25 (1794).
ARADUS — *Fab.* S. R. 119, 12 (1803); *Fall.* Hem. Succ. 140, 10 (1829).

ANEURUS LÆVIS, *Curt.* B. E. ii, fig. 86 (1825); *Burm.* Handb. ii, 253, 1 (1835); *Am. et Serv.* Hém. 307, 1 (1843); *H. Schf.* Wanz. ix, 141, t. 310, fig. 951 (1850); *Kolen.* Mcl. Ent. vi, 25, 228 (1857); *Flor*, Rhyn. Liv. i, 397, 1 (1860); *Fieb.* Europ. Hem. 116 (1861).

ARADUS AVENIUS, *L. Duf.* Rech. 54, 1, t. 4, fig. 36 (1833).

Black-brown.

Head finely granulated; central lobe of face red-brown; neck smooth. *Antennæ* finely granulated; 1st 3 joints, and sometimes the 4th, red-brown.

Thorax.—Pronotum on the anterior margin finely granulated; behind the anterior margin the 1st 3rd with deep punctures alternating with smooth rounded spaces, the remainder of the disk finely crenate-punctate, the posterior angles red-brown. *Scutellum* very finely, transversely crenate. *Elytra; Corium* as a red-brown, triangular piece at the base; *Membrane* smoke-brown, darker on the anterior side, delicately reticulated, the cell and furrow whitish. *Sternum* black, delicately crenate-punctate. *Legs* red-brown, finely granulated.

Abdomen red-brown; *Connexivum*, on each segment, above, 1, beneath 3 small nodules.

Length, 2—2½ lines.

Not rare; gregarious under dead bark, especially of fir trees, in spring and summer.

FAMILY 2.—ARADIDÆ.

Genus 1.—ARADUS, *Fab.*

Oval, flat, the whole upper and under surface, *antennæ*, *elytra*, and *legs* granulated.

Head horizontal, 4-sided, longer than broad, widest in front, produced behind the eyes, then suddenly narrowed to a short neck; *Face;* central lobe very long, projecting beyond the 1st joint of the antennæ, convex, deep, rounded at the end, the sides concealing the small side lobes; antenniferous processes wide, terminated by a long, pointed spine on the outer side. *Antennæ* usually thick, inserted on the inner side of the process, the length of the joints varying in different species; 2nd longest; 4th with the apex conical,

and covered with glossy hairs. *Eyes* semiglobose, prominent. *Rostrum* longer than the head, of varying length, lying in a narrow, close-fitting channel; 1st joint extremely short.

Thorax.—*Pronotum* transverse, 6-sided, with foliaceous side margins, posterior angles produced over the base of the elytra; disk with 4 longitudinal keels, and a callosity within the hinder or posterior angles. *Scutellum* long, triangular, the sides raised above the elytra. *Elytra* posteriorly lying within the connexivum; *Clavus* very narrow, broadest at the base, as long as the scutellum; *Corium* submembranous, narrow, extended on the exterior but abbreviated on the interior margin; anterior margin at the base roundly widened and reflexed for about ½ the length; posterior margin bisinuate or angulated, strongly developed; nerves strong and raised, forming 2 concave cells, the outer one lanceolate with transverse reticulations, the inner one long-triangular, about ½ the length of the outer cell; *Membrane* broad, posteriorly rounded, inner margin straight; with 4 long nerves, forming 3 principal, long, reticulated cells, which do not reach the margins, which, all round, are equally broad, and finely crenate. *Sternum* with a rostral channel, on the *Prosternum* deep and wide, on the *Meso-* and *Metasternum* linear and shallow. *Legs* thin, short.

Abdomen above, concave; *Connexivum* broad, horizontal, outer margin dentate, the anterior margin of each segment being narrower than the posterior margin of the preceding one. Underside with a fine, longitudinal, linear channel; the segments slightly shorter in the middle, their posterior margin divergent obliquely to the sides, in the ♂ more roundly on the 5th and 6th segments; in the ♀ the 5th is shortened and raised in the middle for the reception of the long genital segments, the 6th appearing at the sides of the latter only as a triangular plate.

Genital segments; In the ♂, one only visible, filling the deep, rounded excision on the 6th abdominal segment; on the upper surface rounded behind; on the underside convex and prominent, then deflected, widened, and extended posteriorly beyond the upper side, as a continuation of the connexivum, in a foliaceous plate which is in the middle cleft, and deeply notched. In the ♀, above, 1 segment is visible, posteriorly widened and extended as a continuation of the connexivum in long, projecting lobes; beneath, 2 segments (the 2nd and 3rd) are visible, rarely the end of the 1st is exserted; these segments lie in the opening of the last 2 abdominal segments,

they are both cleft down the middle, and the margins of the cleft are united into a ridge; the first in order of the segments is transversely quadrangular; the next, somewhat variously formed at the base, is extended on the posterior margin, as on the upper side, the end of the 1st segment sometimes projecting through the cleft in the convex basal portion.

The species of *Aradus* are said to feed on *fungi*.

Species 1.—ARADUS DEPRESSUS.

ACANTHIA DEPRESSA, *Fab.* E. S. iv, 72, 22 (1794); *Wolff*, Ic. Cim. iv, 129, t. 13, fig. 123 (1804).

ARADUS DEPRESSUS, *Fab.* S. R. 119, 10 (1803); *Fall.* Hem. Suec. 138, 7 (1829); *Burm.* Handb. ii, 256, 5 (1835); *H. Schf.* Wanz. v, 93, t. 176. fig. 542 (1839); *Sahlb.* Geoc. Fen. 144, 11 (1848); *Flor*, Rhyn. Liv. i, 391, 8 (1860); *Fieb.* Europ. Hem. 112, 5 (1861).

PIESTOSOMA DEPRESSUM, *Am. et Serv.* Hém. 309, 1 (1843).

Brown-black, with brown granulations; 2nd joint of the *antennæ* a little longer than the 3rd; 1st ⅔rds of the side margins of the *pronotum* yellowish-white; *elytra* yellowish-white, mottled with black, the widened anterior margin clear.

Head with 3 rows of large granulations, 1 down the middle and 1 on each side, on the latter a very short spine close to the eyes. *Antennæ* thick, black; 1st joint light brown; 2nd and 3rd with a very short petiole; 3rd with the apex truncate; 4th small at the base, apex white. *Eyes* black. *Rostrum* brownish-yellow, apex black, reaches to the middle of the prosternum.

Thorax.—Pronotum; anterior margin short; sides, within the margin, concave, divergent to the hinder angles; side margins thin, broad, reflexed, smooth and yellowish for ⅔rds of the length, gradually rounded off at the hinder angles, seen from side curved upwards in the middle; the edge granulated, with 1 or 2 larger more prominent spinose granules at the anterior angles; hinder sides not foliaceous, slightly convergent; hinder angles rounded; posterior margin nearly straight; disk with an anterior, transverse depression, the posterior ½ broad, convex; the keels parallel, sharp, but thickly granulated, follow the longitudinal contour of the pronotum; the 2 middle ones nearer to each other than to the side keels, posteriorly divergent. *Scutellum* concave, base raised, with a short,

granulated keel; the raised margins more strongly granulated; apex acute. *Elytra* as long as the abdomen; *Clavus* yellowish-white; *Corium;* the wide basal portion of the anterior margin abruptly rounded, smooth, yellowish-white, posteriorly brown, the edges with brown granulations; disk yellowish-white, mottled transversely with black; nerves at the extreme base, and posteriorly black-brown, in the middle yellowish-white; *Membrane* yellowish-white mottled with black, posteriorly entirely black, or with whitish reticulations. *Sternum* yellow-brown, sides black, base of the coxæ white. *Legs; thighs* brown, the base and a broad ring before the apex, yellowish-white; *tibiæ* brown, or below the base, and at the apex, broadly yellowish-white; *tarsi* brown, or the base yellowish.

Abdomen above yellowish-white, reddish towards the sides; *Connexivum* reddish-brown, the base of each segment whitish. Underside red-brown, darker in the middle; in the ♂ the last segment whitish in the middle. *Genital segments* in the ♂, above, sides nearly straight, black; posterior margin sinuate, projecting obliquely to the middle, at its greatest length broadly rounded off inwardly, and thus forming at the cleft a notch, narrow, deep and triangular, between two lobes; each of the lobes with a pale spot in the middle, which also appears on the under side; beneath, the segment is broadly whitish in the middle. In the ♀ the segments are black, the 1st of the 2 with a whitish, angulated spot posteriorly; the second formed and marked similar to the ♂.

Length, 2—2¾ lines.

Not rare under loose bark, in moss under old trees, and among *débris* in old hedges, in summer.

Species 2.—ARADUS CORTICALIS.

CIMEX CORTICALIS, *Lin.* F. S. 917 (1761); S. N. 482, 17 (1767).
ACANTHIA — *Fab.* E. S. iv, 72, 21 (1794); *Wolff*, Ic. Cim. 87, 81, t. 9, fig. 81 (1800).
ARADUS — *Fab.* S. R. 119, 9 (1803); *Curt.* B. E. v, pl. 230 (1828); *Fall.* Hem. Suec. 136, 2 (1829); *Zett.* Ins. Lap. 270, 2 (1840); *Sahlb.* Geoc. Fen. 142, 8 (1848); *Flor*, Rhyn. Liv. i, 388, 5 (1860); *Fieb.* Europ. Hem. 112, 9 (1861).
— COMPLANATUS, *Burm.* Handb. ii, 256 (1835); *H. Schf.* Wanz. v, 95, t. 176. fig. 544 (1839).

Long-oval, black-brown, dull; 2nd joint of the *antennæ* as long as the 3rd and 4th together; the widened anterior margin of the *elytra* dirty yellowish-brown; the projecting angles of the *connexivum* reddish-yellow.

Head with coarse yellowish granulations; *Crown* very convex, with a deep channel on each side; sides widened, slightly reflexed, before the eyes deflected. *Antennæ* very thick; 1st two joints with very short petioles; the 2nd slightly widened to the apex; 3rd with the apex straight, scarcely widened, the upper half dirty, pale yellowish, sometimes black; 4th narrower than the third, long fusiform, apex white. *Rostrum* yellow-brown, the end black.

Thorax.—Pronotum, anterior margin slightly concave; anterior angles acute; side margins reflexed, widely divergent, nearly straight to the hinder angles, which are broadly rounded; hinder side margin continuously rounded, somewhat convergent; posterior angles broadly rounded into the posterior margin, which is slightly concave in the middle, roundly produced at the ends over the base of the elytra; the edge, as far as the posterior angles, with large, spinose granulations; disk in the middle transversely depressed, in front with four small tubercles, one on each keel; the two middle keels go the whole length of the pronotum, are nearer to each other than to the side keels, towards each end slightly divergent; side keels abbreviated in front, divergent hindwardly, all the keels and the callosities at the posterior angles with large granulations; the keels, side margins, and posterior angles dirty yellowish, on the latter broadly suffused. *Scutellum* concave, with a broad callosity on the basal ½; sides curved, apex sub-acute. *Elytra* not so long as the abdomen; *Clavus* black-brown, claval suture brown-yellowish; *Corium*, base yellow-brown, posteriorly black-brown; the widened portion of the anterior margin dirty yellowish-brown, not reaching half the length, and gradually diminished posteriorly; *Membrane* blackish-brown; nerves yellowish; reticulations whitish; an undefined, yellowish spot at the base of the inner margin. *Sternum;* a spot at the base of the coxæ, pale-yellow; *thighs* red-brown, base and apex pale yellowish; *tibiæ* yellowish-brown, apex pale yellowish *tarsi* brown.

Abdomen in the ♀ beneath, the 5th segment in the middle of the posterior margin straight, thence to the sides oblique; the 6th segment is only visible on each side of the genital segments as a

triangular plate. *Connexivum* above, with a continuous slight ridge near the inner margin; the posterior margin of each segment with an angular deep orange spot; the last segment posteriorly rounded in the ♂: underside with a small yellow nodule near the posterior inner angle of each segment. *Genital segments*, in the ♂, beneath, the single segment is very convex, rounded posteriorly, the foliaceous margin broad, horizontal, projecting far beyond the rounded posterior margin on the upper surface; the sides of the projection roundly divergent, then suddenly convergent, but projecting, forming two long, slightly sinuate lobes, rounded at the apex, leaving a wide deep notch between them, the edges of the cleft united into a ridge half way up the convex part of the segment; the lobes are black externally, yellowish internally. In the ♀ beneath, the 1st of the two visible segments within the connexivum, broad, quadrate, cleft in the centre, posteriorly with a large, central, angular, yellowish spot; the last segment is short, triangular, convex, basal angles prominent, apex obtuse, the foliaceous margin as in the ♂.

Length, 2½—3½ lines.

Not common. Under the loose bark of firs, in summer; West Wickham, Kent.

Species 3.—ARADUS ATERRIMUS.

ARADUS ATERRIMUS, *Fieb.* in litt.

Deep black, dull, the granulations all fine.

Head long, rather narrow, a little widened in front, sides straight, raised, with a small tubercle close to the eyes; before the eyes greatly deflected; antenniferous processes acute, the spinose points slightly turned inwards; central lobe a little widest at the base, its sides somewhat compressed; *Crown* with a deep fovea towards each side. *Antennæ* thin; 1st joint thickest, oval; 2nd and 3rd clavate, the base with a short petiole; 2nd not quite so long as the 3rd and 4th together; 3rd ¾ the length of the 2nd, apex straight; 4th half the length of the 3rd, long fusiform, apex white. *Eyes* very large and prominent. *Rostrum* reaching to the 1st pair of coxæ, black-brown.

Thorax.—Pronotum; anterior margin slightly concave, longer than the width of the neck; side margins narrow, but rounded at

the anterior angles, gradually widened, sinuate and reflexed to the hinder angles, which are rounded; hinder side margins less reflexed, gradually narrower to the posterior angles, which are rounded; posterior margin nearly straight, but little produced at the ends; disk finely transverse-crenate, in front, towards the sides depressed, posteriorly transversely-convex; keels thick, not deep, the two middle ones rather closer to each other than to the side keels, as long as the pronotum, slightly divergent and shallower posteriorly; the side keels much abbreviated in front; between the keels deep furrows; the callosity at the posterior angles large, prominent. *Scutellum* long, narrow, concave, the base raised, side margins much raised and recurved, apex obtuse. *Elytra; Corium*, the foliaceous enlargement of the anterior margin reflexed, not very wide, gradually narrower; nerves and reticulations of the disk strong. *Sternum* with a small yellow spot at the base of the coxæ. *Legs; thighs* black; *tibiæ* and *tarsi* black-brown.

Abdomen; in the ♀ beneath, the 6th abdominal segment is visible only in the connexivum, the intervening transverse space being occupied by the 1st of the visible genital segments, which is quadrangular and very convex; the 2nd visible genital segment is very convex, posteriorly rounded, then suddenly deflected to the horizontal foliaceous margin, of which the two lobes are broad and regularly rounded, the posterior notch between them small and angular, and the cleft extended as a ridge up the convex end of the basal part of the segment. In the ♂, the foliaceous margin of the last genital segment is not so much rounded on the sides as in the ♀. *Connexivum* with a deep yellow, angular spot at the posterior outer angle of each segment; 6th segment long, rounded posteriorly; beneath, a small round yellow tubercle near the anterior inner angle of each segment, and the yellow spot at the posterior angle showing through from the upper side.

Length, $2\frac{3}{4}$ lines.

Rare; one specimen, ♀, taken at Darenth Wood, among chips on the stump of a felled oak, 30th May, 1861 (*Douglas*); another example, ♂, from Mr. J. H. Harding's collection, without note of its locality.

Section 9.—*CAPSINA.**

Div. 1.—UNICELLULI.

Family 1.—BRYOCORIDÆ.

Genus 1.—Bryocoris, *Fall.*

In developed examples somewhat oval; in undeveloped examples somewhat pyriform, without cuneus or membrane.

Head short, vertical in front; twice as broad across the eyes as long; *Crown* flattish convex, raised above the eyes; *Clypeus* very convex; apex almost in a line with the lower margin of the eyes; antenniferous processes very short, in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex, somewhat broad; side lobes short, narrow, rounded outwardly. *Antennæ* in the ♂ somewhat longer than the body, in the ♀ a little shorter; 1st joint 1½ times as long as the head; 2nd, twice as long as the 1st, slightly but gradually thickened to the apex; 3rd and 4th filiform; 3rd longer than the 4th; both together longer than the 2nd. *Eyes* prominent; viewed from above almost hemispherical, from the side, short, subglobose. *Rostrum* short, reaching to beyond the 1st pair of coxæ.

Thorax.—Pronotum longish trapezoidal, 1⅓rd times as broad across the posterior margin as long; anterior margin straight, angles acute; sides slightly concave; hinder angles raised; posterior margin straight; disk convex, with 2 callosities in front. *Scutellum* triangular, raised above the clavus, with a transverse channel concealed, in undeveloped examples, by the posterior margin of the pronotum. *Elytra; Clavus* convex, deflected to the corium; *Corium* horizontal in developed examples, as far as the junction with the cuneus and membrane, which are deflected; in undeveloped examples convex, raised to the centre, and then deflected to the apex; anterior margin reflexed; *Cuneus,* in developed examples, long; base broad. *Sternum: Prosternum;* xyphus triangular, sides margined; *Mesosternum* convex; constricted anteriorly; elevated posteriorly and with a depression in the middle; *Metasternum* convex, somewhat semicircular; *Legs* long, thin; *tarsi;* 2nd and 3rd joints of almost equal length; 1st short.

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Species 1.—BRYOCORIS PTERIDIS.

CAPSUS PTERIDIS, *Fall.* Mon. Cim. 105, 20 (1807); *Germ.* Faun. Ins. Eur. fasc. 10, t. 13 (1813); *Meyer Dür*, Caps. 114, 109 (1843); *Kirschb.* Caps. 76, 70 (1855).

BRYOCORIS — *Fall.* Hem. Suec. i, 152, 1 (1829); *Zett.* Ins. Lap. 266 1 (1840); *Sahlb.* Geoc. Fen. 124, 2 (1848); *Kolen.* Mel. Ent, ii, 129, 116 (1857); *Fieb.* Europ. Hem. 238 (1861).

HALTICUS — *Burm.* Handb. ii, 278, 6 (1835).

CAPSUS PULCHER, *Sahlb.* Geoc. Fen. 93, 4 (1848).

— (CAPSUS) PTERIDIS, *Flor*, Rhyn. Liv. i, 540, 40 (1860).

Developed form.—(*Capsus pulcher*, Sahlb.)

Black, somewhat shining, thickly clothed with fine, depressed, golden hairs.

Head; Crown with a narrow, pale-yellowish streak along the inside of each eye. *Antennæ;* 1st and 2nd joints pale yellowish, apex of the latter broadly black; 3rd and 4th black, base of the 3rd brownish-yellow. *Eyes* black. *Rostrum* yellowish; tip piceous.

Thorax.—*Pronotum* deeply wrinkled transversely. *Scutellum* wrinkled transversely. *Elytra; Clavus* black; *Corium* pale yellowish; the anterior margin interiorly, a patch at its junction with the cuneus and the 1st nerve pitchy-black; *Cuneus* pale yellowish; the interior margin brown; apex narrowly piceous; *Membrane* brown; below the apex of the cuneus a pale, triangular patch, and below the apex of the cell another pale patch extending to, and somewhat widened as it approaches the apex; cell-nerve brown. *Sternum* black. *Legs* pale yellow; *tarsi* pale yellow, 3rd joint blackish; *claws* brownish-yellow.

Length, 1½ line.

Undeveloped form.—Pale yellowish, thickly clothed with fine, depressed, golden yellow hairs.

Head, in the ♂, piceous; *Crown* with a narrow, pale yellowish streak along the inside of each eye; in the ♀ the head is pale yellowish; *Crown* with a round piceous spot; *Face;* base of the central lobe piceous. *Antennæ;* 1st and 2nd joints pale yellowish, apex of the latter pitchy-black, broader in the ♂ than the ♀; 3rd and 4th pitchy-black, base of the 3rd brownish-yellow. *Eyes* and *Rostrum* as in the developed form.

Thorax.—Pronotum deeply wrinkled transversely; callosities and sometimes the anterior margin piceous. *Scutellum* reddish-yellow; anterior portion, as far as the transverse channel and sides, piceous. *Elytra; Corium* pale yellowish, transversely wrinkled. *Sternum* piceous. *Legs* as in the developed form.

Length, ♂ 1— ♀ 1½ line.

The only developed examples we have seen were taken by Mr. Crotch, but we cannot give either date or locality. The undeveloped form of the insect is abundant at Tunbridge Wells, on *Pteris aquilina* in September; Llangollen.—(*T. V. Wollaston.*)

Genus 2.—MONALOCORIS, *Dahlb.*

Oval.

Head short; vertical in front; wider across the eyes than long; *Crown* flattish convex, raised above the eyes, and deflected to the base of the clypeus; *Clypeus* convex, apex in a line with the lower margin of the eyes; antenniferous processes very short, in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex; side lobes short, narrow. *Antennæ* in the ♂ ⅗rds the length of the body, in the ♀ as long as the body; 1st joint shorter than the head; 2nd more than twice the length of the 1st, gradually thickened to the apex; 3rd and 4th filiform; 3rd longer than the 4th; both together a little longer than the 2nd. *Eyes* somewhat prominent; viewed from above hemispherical, from the side oval; *Rostrum* reaching to the 3rd pair of coxæ; 1st joint longer than the head; 4th long.

Thorax.—Pronotum short, trapezoidal, 1½ times as broad across the posterior margin as long; anterior margin straight, angles acute; sides slightly convex; hinder angles acute; posterior margin convex; disk convex, with 2 callosities in front. *Scutellum* triangular, equilateral, raised above the clavus; somewhat convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex; horizontal as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* short, triangular; the anterior margin notched at the base. *Sternum: Prosternum;* xyphus triangular; *Mesosternum* short, convex, with a central channel; posterior margin convex, broadly indented in the

middle; *Metasternum* convex, centre prominently angled. *Legs; tarsi;* 3rd joint longest; 1st and 2nd of almost equal length.

Species 1.—MONALOCORIS FILICIS.

CIMEX FILICIS, *Lin.* S. N. 718, 20 (1767).
ACANTHIA FILICIS, *Wolff,* Ic. Cim. 46, t. 5, fig. 43 (1801).
PHYTOCORIS — *Fall.* Hem. Suec. i, 108, 61 (1829); *Hahn,* Wanz. ii, 86, fig. 172 (1831).
CAPSUS — *Meyer Dür,* Caps. 71, 43 (1843); *Sahlb.* Geoc. Fen. 113, 50 (1848); *Kirschb.* Caps. 70, 76 (1855).
BRYOCORIS — *Kolen.* Mel. Ent. ii, 129, 115 (1857).
CAPSUS (CAPSUS) FILICIS, *Flor,* Rhyn. Liv. 539, 39 (1860).
MONALOCORIS — *Fieb.* Europ. Hem. 237 (1861).

Pitchy-brown, shining; clothed with fine, short, depressed, golden yellow hairs.

Head pale reddish, or ochreous-yellow. *Antennæ;* 1st and 2nd joints pale yellowish; apex of the latter, and the 3rd and 4th pitchy-black; base of the 3rd narrowly yellowish. *Eyes* black. *Rostrum* ochreous-yellow; tip black.

Thorax.—Pronotum piceous, or pitchy-black, thickly but finely punctured; anterior margin frequently, and hinder angles, ochreous-yellow. *Scutellum* piceous, finely wrinkled transversely. *Elytra; Clavus* ochreous-yellow; inner margin, suture, and base of the nerve pitchy-black; *Corium;* anterior margin ochreous-yellow, the colour generally spreading a little way on the disk at the apex; *Cuneus* yellowish; *Membrane* fuscous, iridescent; Cell-nerve brown. *Legs* pale yellow; *thighs* on the upper side, near the middle, with a blackish spot; *tarsi* yellow; 3rd joint and *claws* blackish.

Length, 1 line.

Common everywhere, on *Pteris aquilina,* and other plants, by sweeping and beating, in July, August, and September.

Div. 2.—BICELLULI.

Family 2.—PITHANIDÆ.

Genus 1.—Pithanus, *Fieb.*

Linear-elongate; in undeveloped examples the abdomen is longish oval.

Developed form.—Head large, vertical in front; viewed from the side subglobose; as long as the breadth across the eyes; *Crown* flat, horizontal, below the upper margin of the eyes; *Clypeus* prominent, very convex; apex in a line with the lower margin of the eyes; side lobes broad, convex; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face*, central lobe long, very convex; side lobes short, broad, convex, rounded outwardly. *Antennæ* shorter than the body; 1st joint short, stout, cylindrical, very narrrow at the base; 2nd slightly clavate, about four times the length of the 1st; 3rd and 4th filiform, 3rd twice as long as the 4th, both together longer than the 2nd. *Eyes* large, prominent, spheroidal, axis almost perpendicular. *Rostrum* reaching nearly to the 1st abdominal segment; 1st joint stout; 3rd and 4th somewhat fusiform.

Thorax.—Pronotum long, trapezoidal, constricted in front; sides nearly straight for about $\frac{2}{3}$ their entire length, then suddenly widened to the acute hinder angles; posterior margin concave; disk convex, with two large callosities in front, having a deep transverse channel in their centre; central keel short, terminating behind the callosities. *Scutellum* large, triangular, convex; base nearly as wide as the posterior margin of the pronotum; sides $\frac{1}{3}$ their length from the base suddenly depressed obliquely until meeting the central keel of the hinder portion; anterior portion considerably raised above the clavus, and forming, with the pronotum, almost a continuous curve. *Elytra* a little longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* convex, horizontal as far as the junction with the cuneus and membrane, which are deflected. *Sternum: Prosternum;* xyphus short, triangular; *Mesosternum* convex, somewhat contracted posteriorly; posterior margin slightly indented in the middle; *Metasternum* convex, somewhat semicircular. *Legs*

thin; *tarsi* long; 1st joint longest, as long as the 2nd and 3rd together.

Undeveloped form.—*Head* as in developed specimens.

Thorax.—*Pronotum* cylindrical, constricted at each end; two large callosities joined in front by a transverse keel, occupy the entire space between the constrictions; the central keel terminates between the callosities, on each side of which is a deep fovea. *Scutellum* triangular, convex, raised above the clavus and gradually deflected from the base to the apex. *Elytra* very short, barely covering the 1st abdominal segment; in the ♂ rounded at the apex; in the ♀ cut off nearly square; without cuneus or membrane. *Legs* as in developed examples.

Abdomen upperside convex; *Connexivum* broad, almost perpendicular.

Species 1.—Pithanus Märkeli.

Capsus Markeli, *H. Schf.* Wanz. iv, 78, fig. 406 (1838); *Kirschb.* Caps. 44, 28 (1855).
— flavolimbatus, *Bohem.* Vet. Akad. Handl. 252 (1849).
Cyllecoris vittatus, *Dahlb.* Vet. Akad. Handl. 205 (1850).
Capsus (Capsus) Märkelii, *Flor*, Rhyn. Liv. i, 513, 26 (1860).
Pithanus Märkeli, *Fieb.* Europ. Hem. 239 (1861).

Developed form.—Black.

Head slightly shining; *Crown* with two short, transverse, yellow streaks between the eyes. *Antennæ* black; 1st joint extremely narrow at the base, then suddenly swelled and curved on the inside, the upper half yellowish white. *Rostrum* yellowish; tip black.

Thorax.—*Pronotum* very finely wrinkled transversely behind the callosities. *Elytra; Clavus* transversely wrinkled down the centre, from the base a short row of deep punctures; *Corium* piceous, the anterior margin broadly pale brownish yellow throughout its entire length, the colour extending more or less upon the disk; *Cuneus* pale brownish-yellow; the interior margin and the apex pitchy-black; *Membrane* pitchy-brown; cell-nerves unicolorous. *Legs* ochreous-brown; *thighs*, 1st pair with one row of black spots on the underside; 2nd and 3rd with two rows on the upper and undersides, tips of the 3rd pair piceous; *tibiæ* darker than the thighs, sparingly set with long fine hairs; base of the 3rd pair and apex of

all the pairs piceous; *tarsi* ochreous-brown; 3rd joint and claws pitchy-black.

Abdomen black; *Connexivum* in the ♂ pitchy-black, in the ♀ yellow.

Length, 2—2½ lines.

Undeveloped form.—Black.

Head as in developed examples.

Elytra: Clavus wrinkled; *Corium*, anterior margin pale-yellowish, broadest at the apex. *Abdomen* as in developed examples; *Connexivum* bright pale green. *Legs* of the ♂ pale yellow; *tarsi*, 3rd pair, and *claws* piceous; in the ♀ the *thighs* are pale pitchy; *tibiæ* darker; the spots on the thighs as in the developed form.

Length, ♂ 2, ♀ 2¼ lines.

We have only seen a single developed example of this insect, taken by Dr. Power at Shirley, in August, 1862. The undeveloped form appears in June, and has been taken at Eltham, at the roots of grass beneath bushes. New Forest (*Marshall*). Lympstino (*Parfitt*).

Family 3.—MIRIDÆ.

Genus 1.—Miris, *Fab.*

Linear-elongate, sides more or less parallel.

Head horizontal; viewed from the side almost a parallelogram, as long as or longer than the breadth between the eyes: *Crown* slightly convex, with a central channel; *Clypeus* long, sometimes slightly raised at the apex, and with lateral lobe-like processes in front of the eyes, at the end of which is a tubercle bearing the antennæ; *Face* triangular; central lobe very large, prominent, very convex; side lobes very short; narrow. *Antennæ* variable in length; 1st joint stout, cylindrical, somewhat bent, longer than the head; 2nd variable in length, not so stout as the 1st; 3rd and 4th filiform, both together longer or shorter than the 2nd. *Eyes* more or less prominent, viewed from above somewhat hemispheric, from the side, oval. *Rostrum* variable in length, sometimes reaching to the 2nd pair of coxæ, sometimes to the 2nd abdominal segment; 1st joint more or less stout.

Thorax.—Pronotum trapezoidal; more or less convex; generally with a central keel, and 2 more or less distinct callosities in front; as broad as long, or broader across the posterior margin; anterior margin concave, angles acute; sides nearly straight, sometimes margined; hinder angles acute or rounded; generally raised; posterior margin straight, or sometimes concave in the middle. *Scutellum* triangular, slightly raised above the clavus, with a transverse channel in front and a longitudinal central keel. *Elytra; Clavus* convex, deflected to the corium; *Corium* horizontal, flat, or slightly convex. *Cuneus* and *Membrane* continued in a line with the corium. *Sternum: Prosternum;* xyphus triangular, sometimes pointed and with a flattish central channel; sides sometimes convex and margined: *Mesosternum* convex; sometimes narrowed posteriorly and faintly indented, or flattish above, slightly deflected to the posterior margin, and with a central channel; *Metasternum* convex; centre prominent, angular, or flattish with a callosity in the centre. *Legs* long and thin; 3rd pair longest; *thighs* sometimes toothed beneath; *tibiæ* sometimes bent near the base; *tarsi* long, 1st joint longest; 2nd shortest; 2nd and 3rd together longer than the 1st.

Species 1.—MIRIS HOLSATUS.

MIRIS HOLSATUS, *Fab.* S. R. 254, 4 (1803); *Full.* Hem. Suec. i, 132, 7 (1829); *H. Schf.* Wanz. iii, 41, fig. 256 (1836); *Zett.* Ins. Lap. 280, 4 (1840); *Meyer Dür,* Caps. 36, 5 (1843); *Kolen.* Mel. Ent. ii, 99, 72 (1845); *Schill.* Arb. und Veränd. 52 (1845); *Sahlb.* Geoc. Fen. 86, 2 (1848); *Kirschb.* Caps. 34, 7 (1855); *Flor,* Rhyn. Liv. i, 427, 4 (1860); *Fieb.* Europ. Hem. 239, 3 (1861).

— HOLSATICUS, *Burm.* Handb. ii, 265, 4 (1835).

Longish oval. Green or brownish yellow.

Head finely punctured; *Crown* with a central channel, deepest between the eyes and continued to the apex of the clypeus; along the inner margin of the eyes a pitchy-black line. *Antennæ* brownish-yellow, almost as long as the body; 1st joint clothed with short blackish hairs. *Eyes* brown, somewhat prominent. *Rostrum* yellowish, reaching to the 2nd pair of coxæ; tip black.

Thorax.—Pronotum short, the length equal to the width across the posterior margin; anterior margin concave; sides almost straight to before the hinder angles, then gently rounded; the latter slightly raised; posterior margin nearly straight; disk convex posteriorly, finely punctured, the anterior margin of the flat callosities channelled; central keel pale-yellowish; a more or less broad black or piceous streak extends across the disk in a line with each eye, and frequently the callosities are entirely black or piceous. *Scutellum* finely punctured; central keel pale-yellowish, generally margined with piceous, basal angles piceous. *Elytra: Clavus;* inner margin narrowly piceous, and with a more or less distinct piceous streak on each side the pale nerve; *Corium;* anterior margin broadly pale-yellowish; from the centre of the disk a piceous streak extends through the nerve of the inner cell to the apex of the anterior margin of the membrane, generally interrupted as it crosses the posterior margin of the corium; *Membrane* gray, somewhat abbreviated, with a short piceous streak on the anterior margin opposite the cuneus; Cell-nerves reddish or yellowish; inner cell sometimes wanting. *Legs* yellowish, brownish-yellow or green, clothed with short hairs, especially on the tibiæ; *thighs* of nearly equal thickness; 3rd pair with 2 rows of brownish or blackish spots on the upperside and 1 row on the underside, occasionally the spots are more or less confluent; *tibiæ* straight; *tarsi;* 1st joint longest, apex of the 3rd and *claws* piceous.

Length, 3—3½ lines.

Apparently a scarce species. Taken in Headly Lane in September. We have also received it from Mr. G. R. Crotch, but without date or locality.

Species 2.—Miris lævigatus.

Cimex lævigatus, *Lin.* S. N. 730, 101 (1767); *De G.* Mém. iii, 192, 30 (1780).

Miris — *Fab.* S. R. 253, 2 (1803); *Fall.* Hem. Suec. i. 130, 4 (1829); *Burm.* Handb. ii, 265, 1 (1835); *H. Schf.* Wanz. iii, 43, fig. 259 (1836); *Am. et Serv.* Hem. 277, 1 (1843); *Meyer Dür*, Caps. 35, 3 (1843); *Kolen.* Mel. Ent. ii, 98, 70 (1845); *Schill.* Arb. und Veränd. 52 (1845); *Kirschb.* Caps. 33, 5 (1855); *Flor*, Rhyn. Liv. i, 425, 3, & ii, 608 (1860); *Fieb.* Europ. Hem. 240, 1 (1861).

— virens, *Hahn*, Wanz. ii, 79, fig. 165 (1835).

Green, yellow, or reddish-yellow. *Thighs;* 3rd pair notched before the apex; tibiæ bent below the base, and somewhat thickened.

Head very finely punctured, and clothed with short yellowish hairs, especially in front; *Crown;* central furrow deep, short; behind the eyes a short black streak. *Antennæ* sometimes entirely brown, or the 1st joint and basal half of the 2nd greenish, thickly clothed with longish, somewhat erect yellowish hairs, especially the 1st; apical half of the 2nd, 3rd, and 4th, red. *Rostrum* yellow, or brownish-yellow; 4th joint brown-black.

Thorax.—Pronotum; anterior margin concave, angles acute, and produced; sides narrowly margined, very slightly concave; hinder angles raised; posterior margin almost straight across the scutellum, faintly notched in the middle; disk convex, deeply and finely punctured, with a blackish or piceous longitudinal streak extending from behind each eye sometimes across its entire length; central keel frequently pale yellowish. *Scutellum* finely punctured; basal angles black or piceous; central keel yellowish. *Elytra: Clavus;* inner margin in yellow examples, with a small piceous spot at the scutellar angle, and another at the apex, the nerve narrowly margined with piceous; in green examples the apex is generally reddish; *Corium* in yellow examples with a more or less distinct, longitudinal, piceous streak between the 1st and 2nd nerves, joined to a triangular brown or piceous spot at the junction of the 1st nerve with the inner basal angle of the cuneus; in green examples the apical spot alone is visible; *Membrane* gray, with a piceous streak extending from below the apex of the inner cell-nerve to the apex of the anterior margin; cell-nerves in yellow examples, whitish or yellowish-white; in green examples, frequently the outer cell-nerve is reddish, and the inner one green. *Sternum; Mesosternum* black in the centre; *Legs* pale or dark-brown, sparingly clothed with short yellowish hairs; *thighs;* 3rd pair notched before the apex, with 2 longitudinal rows of piceous spots on the upper side; *tibiæ* bent below the base, and somewhat thickened, apex often ferruginous-red; *tarsi* yellowish, or brownish-yellow; apex of the 3rd joint and *claws* piceous.

Abdomen underneath yellowish, sides with a piceous streak.

Length, 3½—4¼ lines.

This insect bears a great resemblance to *M. virens;* the principal distinctive character being the absence of the piceous spot at the apex of the corium in the last named. We have not seen an authentic British specimen of *M. virens.* A common species, and

widely distributed from June to October. It is to be met with by searching and sweeping amongst herbage and grass. It has occurred at New Forest, Folkestone, Lee, Bexley and Scarborough.

Species 3.—Miris calcaratus.

Miris calcaratus, *Full.* Hem. Succ. i, 131, 5 (1829); *Burm.* Handb. ii, 265, 2 (1835); *H. Schf.* Wanz. iii, 39 (1836); *Zett.* Ins. Lap. 280, 3 (1840); *Am. et Serv.* 278, 2 (1843); *Meyer Dür*, Caps. 34, 1 (1843); *Schill.* Arb. und Veränd. 52 (1845); *Sahlb.* Geoc. Fen. 86, 1 (1848); *Kirschb.* Caps. 33, 4 (1855); *Flor*, Rhyn. Liv. i, 421, 1 (1860).

— dentata, *Hahn*, Wanz. i, 15, fig. 8 (1831).

Brachytropis calcarata, *Fieb.* Europ. Hem. 241 (1861).

Greenish or brownish-yellow, sometimes with a very pale rosy tinge. *Pronotum;* sides narrowly margined; *thighs;* 3rd pair toothed underneath.

Head finely punctured, and clothed with short hairs, especially in front; *Crown* with a central channel extending to the apex of the clypeus, deepest between the eyes; sometimes the channel and a line along the inner margin of each eye pitchy-brown. *Antennæ* in the ♂ shorter than in the ♀; brownish, or green; in the latter case the 3rd and 4th joints are frequently reddish; 1st and 2nd thickly clothed with longish, somewhat depressed, yellowish hairs; 2nd thinnest at its apex; 3rd and 4th somewhat filiform. *Rostrum* brownish-yellow, reaching to the 2nd pair of coxæ; tip black.

Thorax.—Pronotum thickly and finely punctured, crenate in front; sides narrowly margined, and with a deep fovea a little behind the anterior angles; central keel very flat, and with the side margins pale yellowish; disk with a more or less distinct pitchy streak in a line with each eye; hinder angles somewhat raised and widened. *Scutellum* finely punctured, the anterior portion almost concealed beneath the posterior margin of the pronotum; in brown examples the sides and central keel are pale. *Elytra; Clavus*, inner margin frequently, narrowly rosy; *Corium* very finely punctured, and clothed with extremely short, depressed yellow hairs; anterior margin broadly, and nerves, pale yellowish; disk between the 1st

nerve and the claval suture frequently suffused with pale rosy; *Membrane* pale, with a blackish streak extending from below the cells to the apex; cell-nerves green, or yellowish, or rosy, the inner one exteriorly margined with blackish. *Sternum; Prosternum* finely punctured, and with a piceous streak along the middle; *Mesosternum;* centre black. *Legs;* brownish or green; *thighs;* 3rd pair with 2 teeth on the underside, the posterior one longest, and bent outwardly; and with 2 longitudinal rows of piceous spots on the upperside, and 1 row on the underside; *tibiæ;* 3rd pair slightly bent inwardly a little below the base; *tarsi;* 1st joint longest.

Abdomen; upperside black; *connexivum* red; underneath yellowish, with a black streak along the side, terminating before the apex.

A common species, and widely distributed. It has occurred at Lewisham, Darenth, and elsewhere, by sweeping and searching amongst grass, &c., in June and July. Scarborough (*Wilkinson*).

Species 4.—Miris erraticus.

Cimex erraticus, *Lin.* S. N. ii, 731, 107 (1767).
Miris — *Fall.* Hem. Succ. i, 132, 6 (1829); *Hahn*, Wanz. ii, 78, figs. 163 & 164 (1834); *Burm.* Handb. ii, 265, 3 (1835); *H. Schf.* Wanz. iii, 40 (1836); *Meyer Dür*, Caps. 34, 2 (1843); *Am. et Serv.* Hém. 278, 3 (1843); *Kolen.* Mel. Ent. ii, 96, 68 (1845); *Schill.* Arb. und Veränd. 52 (1845); *Sahlb.* Geoc. Fen. 87, 4 (1848); *Kirschb.* Caps. 32, 1 (1855); *Flor*, Rhyn. Liv. i, 431, 6, & ii, 608 (1860).
— tritici, *Curt.* Brit. Ent. xv, 701 (1838).
Notostira erratica, *Fieb.* Europ. Hem. 242 (1861).

♂ Black, *pronotum* and *corium* margins green, or greenish-yellow; ♀ greenish, yellowish-green, or rosy.

♂ *Head; Crown* somewhat depressed in the centre towards the hinder margin, and with a yellow spot on each side of the central channel; *Clypeus* with a somewhat broad yellow streak, extending from the front of the eyes to the antenniferous processes.

Thorax.—Pronotum, sides greenish-yellow, widest posteriorly; central keel greenish-yellow. *Elytra: Corium;* anterior margin green, or greenish-yellow; *Cuneus* green or greenish-yellow; inner

basal angle black; *Membrane;* cell-nerves black; apex of the inner cell-nerve yellowish. The other characters as in the ♀.

♀ *Head* almost as long as the pronotum, finely punctured; *Crown,* central furrow deep, terminating in a line with the front of the eyes; *Clypeus* notched at the apex, the antenniferous processes sometimes, and a central line, piceous. *Antennæ* brownish or brownish-pink, clothed with short, stout, somewhat erect, yellow hairs; 1st joint with a broad black streak along the outside, frequently extending throughout its entire length, sometimes wanting in the ♀; apical half of the 3rd and 4th entirely piceous. *Rostrum* brownish-yellow, tip brown.

Thorax.—Pronotum, anterior margin concave; sides narrowly margined, almost straight, with a deep triangular fovea at the anterior margin of the flat callosities; hinder angles rounded, slightly raised; posterior margin almost straight; disk flattish convex, posteriorly finely wrinkled transversely, with a central and 2 side keels yellowish-white, frequently margined with piceous. *Scutellum* sometimes rosy, with a pale, yellow, central keel, the latter generally margined with piceous. *Elytra; Clavus,* inner margin narrowly piceous, disk on each side of the yellowish nerve frequently more or less piceous, suture yellowish; *Corium* nerves pale yellowish; *Membrane* black, below the inner cell-nerve, and extending to the apex, a triangular whitish patch; cell-nerves yellowish or brownish; inner cell white. *Legs* brownish, or brownish-yellow, thickly covered with long yellowish hairs, especially on the tibiæ; *thighs* of the 2nd and 3rd pairs cut off obliquely on the underside before and to the apex; 3rd with two longitudinal rows of black spots on the upper, and one row on the underside; sometimes the 2nd pair have a row on the upperside, or the 1st a row on the inside; *tibiæ,* 3rd pair almost straight, a little thickened below the base; *tarsi,* apex of the 3rd pair, and frequently the extreme apex of the 1st and 2nd, and *claws* piceous.

Length, 3½—4 lines.

An abundant species everywhere, by sweeping and searching amongst herbage in August and September.

Species 5.—MIRIS LONGICORNIS.

MIRIS LONGICORNIS, *Fall.* Hem. i, 129, 3 (1829); *H. Schf.* Wanz. iii, 43, fig. 258 (1836); *Meyer*, Caps. 37, 7 (1843); *Sahlb.* Geoc. Fen. 87, 5 (1848); *Kirschb.* Caps. 32, 2 (1855); *Flor*, Rhyn. Liv. i, 434, 8 (1860).
MEGALOCERÆA — *Fieb.* Europ. Hem. 243 (1861).

Elongate, linear. Yellowish-green. *Antennæ* considerably longer than the body. *Legs;* 2nd pair shortest; 3rd almost twice as long as the 2nd; *tibiæ* straight.

Head.—*Crown* convex, with a deep central channel terminating almost in a line with the apex of the antenniferous processes; *Clypeus;* extreme apex slightly reflexed. *Antennæ* considerably longer than the body, yellowish or brownish-yellow; 1st joint as long as the pronotum and scutellum together, clothed with short black hairs; 2nd for about ⅔ its length clothed with short black hairs; 3rd and 4th generally brownish. *Eyes* somewhat prominent. *Rostrum* yellowish-green, reaching to the 3rd pair of coxæ; tip blackish.

Thorax.—*Pronotum* with a more or less distinct transverse channel behind the concave anterior margin, angles acute; sides slightly concave, very narrowly margined from behind the transverse channel; hinder angles short, acute, slightly raised; posterior margin slightly concave across the scutellum; disk finely shagreened, brownish or brownish-yellow, margins and central keel yellow; callosities with a deep fovea in the centre. *Scutellum* brownish-yellow with a pale-yellow central line; basal angles with a deep fovea. *Elytra: Corium;* inner margin of the 1st nerve whitish; *Membrane* gray, with a slight purple tinge, faintly iridescent, below the inner cell, and extending to the apex, a paler patch; cell-nerves yellowish-white; inner cell pale. *Legs* greenish-yellow; 2nd pair shortest; 3rd almost twice as long as the 2nd, clothed with very short black hairs; *tibiæ* brownish at the apex, with longish, erect, somewhat spinose, black hairs; *tarsi* and *claws* blackish, base of the 1st joint of the former brown.

Length, 4 lines.

Not an uncommon species by sweeping and beating plants growing on hedge-banks. It has been taken at Lee, Bexley, Dartford, and Mickleham, in June and July.

Species 6.—Miris ruficornis.

Miris ruficornis, *Fall.* Hem. Suec. i, 133, 8 (1829); *H. Schf.* Wanz. iii, 40 (1836); *Zett.* Ins. Lap. 281, 5 (1839); *Meyer*, Caps. 37, 6 (1843); *Schill.* Arb. und Veränd. 52 (1845); Geoc. Fen. 87, 6 (1848); *Kirschb.* Caps. 32, 3 (1855); *Flor*, Rhyn. Liv. i, 435, 9 (1860), & ii, 608 (1861).

Trigonotylus — *Fieb.* Europ. Hem. 243 (1861).

Linear. Bluish-green or green. *Tibiæ* straight.

Head; Crown with a deep central channel terminating almost in a line with the apex of the antenniferous processes. *Antennæ* red, as long as the body; 1st joint as long as the pronotum, 2nd, 3rd, and 4th of almost equal thickness, 4th generally brownish-red. *Eyes* somewhat prominent. *Rostrum* brownish-yellow, reaching to the 2nd pair of coxæ; tip piceous.

Thorax.—Pronotum short; anterior margin concave, angles acute; sides almost straight, narrowly margined; hinder angles short, rounded, reflexed; posterior margin concave across the scutellum; disk with a pale central keel and 2 callosities in front; on either side, before the latter, a transverse triangular fovea or channel terminating before reaching the former, a streak in a line with each eye and the margins of the central keel piceous. *Scutellum* with a yellowish central keel, its margins frequently piceous. *Elytra* somewhat diaphanous; *Cuneus* long and narrow; *Membrane* gray; cell-nerves pale greenish. *Legs* greenish or brownish-yellow; *tarsi* reddish or brownish, 3rd joint and *claws* blackish.

Length, $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

A common species amongst grass, &c., in June and July. It has been taken at Dartford, Charlton; Scarborough (*Wilkinson*).

Genus 2.—Acetropis, *Fieb.*

♂ linear; ♀ longish oval.

Head horizontal; as long as the breadth across the eyes; *Crown* almost flat, with a curved depression between the eyes; *Clypeus* triangular, with somewhat rounded sides, apex reflexed; *Face* almost

vertical; central lobe convex; side lobes long. *Antennæ;* 1st joint cylindrical, as long as or longer than the pronotum, stouter in the ♀ than in the ♂, somewhat tapered to the apex; 2nd of the ♂ 2⅔ times as long as the 1st, of the ♀ 3½ times; 3rd and 4th together about ½ the length of the 2nd; 4th about ½ the length of the 3rd. *Eyes* small. *Rostrum* reaching to beyond the 3rd pair of coxæ; 1st joint stout.

Thorax.—Pronotum horizontal; short, trapezoidal; anterior margin concave, about ½ the width of the posterior one; sides margined and reflexed; hinder angles acute, slightly raised; posterior margin almost straight; disk flattish convex, with a transverse channel in front, deepest in the centre at the termination of the strong central keel. *Scutellum* triangular, with a transverse channel near the base; hinder portion convex, with a strong central keel. *Elytra* longer than the abdomen; all the nerves strong and elevated; *Clavus* deflected to the corium; *Corium,* anterior margin nearly flat; *Cuneus* and *Membrane* generally imperfectly developed; the former is then continued round the apex of the latter and the outer cell occupies nearly the entire length of the membrane. *Sternum: Prosternum;* xyphus almost conical; *Mesosternum* broad, convex, elevated posteriorly; posterior margin concave on the sides, central angle rounded and slightly indented; *Metasternum* convex. *Legs* somewhat long and slender; *tarsi* long; 1st and 3rd joints almost of equal length; 2nd half as long as the 1st.

Species 1.—ACETROPIS SETICULOSA.

ACETROPIS SETICULOSA, (*Pict.* and *Meyer*) *Fieb.* Europ. Hem. 244, 2 (1861).

♂ dusky yellow, very sparingly clothed with short, somewhat erect brownish-black hairs.

Head; Crown with a black central line extending to the apex of the clypeus and one on each side along the inner margin of the eyes and antenniferous processes; *Face;* central lobe with a broad, piceous line down the centre. *Antennæ* piceous, clothed with short black hairs; 1st joint blackish; 2nd slightly clavate; 3rd pitchy-black at the base, extreme base of the 2nd and 3rd, yellow. *Rostrum* yellowish, tip brown.

Thorax.—Pronotum; sides broadly yellowish-white; disk finely punctured, on each side a broad line extending from behind the eyes over the entire length, and a central line divided posteriorly by the pale central keel, black. *Scutellum;* basal angles brownish-yellow; transverse channel black, interrupted in the middle by the central keel, the latter with a piceous or blackish streak on each side scarcely reaching to the apex. *Elytra* dusky yellow; *Cuneus* very long, continued round the apex of the anterior margin of the membrane; *Membrane* pale fuscous; inner marginal nerve brownish; cell-nerves white; cells very long, extending nearly to the apex of the membrane. *Legs* brownish-yellow, clothed with short, erect, black hairs; *thighs*, pale at the base; apex blackish and with a short longitudinal row of black spots; *tibæ;* 3rd pair slightly bent below the base; *tarsi* and *claws* black; 1st joint of the former brownish-yellow.

Length, 3 lines.

♀ pale yellowish, sparingly clothed with short brownish-black hairs.

Head.—Crown with a central line extending to the apex of the clypeus, and another on each side extending from the back of the head along the inside of the eyes (narrowly) and the antenniferous processes, pitchy-brown; *Clypeus*, apex pointed and somewhat reflexed. *Antennæ* yellowish, sparingly clothed with short, blackish-brown hairs; 3rd and 4th joints piceous. *Rostrum* yellowish, tip brown.

Thorax.—Pronotum; sides almost straight, pale yellow, margins somewhat reflexed; disk thickly and finely punctured, in front with a faint transverse channel, behind which are 2 somewhat indistinct callosities; margins of the pale central keel and 2 streaks extending from behind the eyes over the entire disk, pitchy brown. *Scutellum;* basal angles and a line on each side the central keel, pitchy-brown. *Elytra; Clavus* finely shagreened; outer half of the space between the nerve and suture pale pitchy-brown; *Corium* finely shagreened; anterior margin reflexed, broadly pale throughout its entire length; between the claval suture and 1st nerve pale pitchy brown; *Cuneus* long, carried round the apex of the membrane; *Membrane* pale fuscous; cell-nerves yellowish; cells long, nearly extending to the apex of the membrane. *Legs* pale-brownish or greenish-yellow, sparingly clothed with short black hairs; *thighs*

at the apex piceous or brown and with a short longitudinal row of brown spots; *tarsi;* 1st and 2nd joints pitchy-brown; 3rd and *claws* black.

Length, 2½ lines.

A single ♂ and 2 or 3 ♀ examples of this insect were taken by the Rev. T. A. Marshall in the New Forest, and at Birchwood in July and August of the present year Dr. Power took several ♀ specimens.

Genus 3.—Lopomorphus.*

Linear elongate, more or less parallel; ♀ frequently undeveloped.

Head.—Crown horizontal, flattish convex; *Clypeus* very convex; apex rounded, overhanging the face, in a line with the lower half of the eyes, with short, lateral, lobe-like processes, at the end of which is a tubercle bearing the antennæ; *Face* almost vertical; central lobe long, broad, convex; side lobes short, narrow, rounded outwardly. *Antennæ* variable in length; 1st joint stout, longer than the head; 2nd not so stout as the 1st, and 3 times longer; 3rd and 4th together shorter than the 2nd, and perceptibly thinner. *Eyes* large, prominent. *Rostrum* reaching to or beyond the 3rd pair of coxæ.

Thorax.—Pronotum trapezoidal, broader than long, with 2 callosities in front; posterior margin at least double the length of the anterior one; anterior margin concave; sides margined to behind the callosities; hinder angles short; posterior margin almost straight, rounded towards and at the hinder angles; disk convex. *Scutellum* large, triangular, with a transverse channel a little before the middle; anterior portion flattish, deflected to the transverse channel; hinder portion convex. *Elytra; Clavus* convex, deflected to the corium; nerve stout, prominent; *Corium* flattish convex, horizontal as far as the junction with the cuneus and membrane, which are deflected; nerves stout and prominent; *Cuneus* in developed examples long, narrow, triangular; in undeveloped examples short; *Membrane* in undeveloped examples very short and narrow, with or without a short cell. *Sternum: Prosternum;* xyphus triangular, concave, sides margined; *Mesosternum* convex, rounded posteriorly, with a central channel; posterior margin slightly indented in the

* Λοπός—*Lopus*, a genus of Hemiptera; μορφή, a form, shape.

middle; *Metasternum* convex, depressed at the base; centre angled, prominent. *Legs* long, somewhat thin; *thighs* cylindrical, almost of equal thickness; *tarsi* long; 1st joint as long as the 2nd and 3rd together.

Species 1.—Lopomorphus carinatus.

Lopus carinatus, *H. Schf.* Wanz. vi, 49, fig. 609 (1841); *Kirschb.* Caps. 34, 8 (1855).
Acetropis — *Fieb.* Europ. Hem. 244 (1861).

The ♂ black, very sparingly clothed with brownish or yellowish hairs.

Head as long as is the breadth across the eyes; *Crown* with two triangular, yellow spots between and adjoining the inner margin of the eyes, and two reddish-yellow ones next the anterior margin of the pronotum. *Antennæ* piceous, not so long as the body; 1st joint and basal third of the 2nd pitchy-black; extreme base of the 2nd reddish-brown; 4th brown; 1st as long as the pronotum, cylindrical, slightly curved and swelled out beyond the base; 2nd cylindrical, 2½ times as long as the 1st; 3rd about ¾ the length of the 2nd; 4th scarcely half the length of the 3rd. *Eyes* large and prominent, the upper surface raised above the crown. *Rostrum* reaching to the 1st abdominal segment, tip black.

Thorax.—Pronotum with a transverse channel in front, behind which are two callosities; a central line, not extending to the anterior margin, and the margins (broadest at the hinder angles) pale yellow. *Scutellum* with a pale-yellow longitudinal line through the centre. *Elytra: Clavus;* inner margin pitchy-black; centre more or less shaded with brown, nerve pale-brown; *Corium;* anterior margin narrowly white throughout its entire length; 1st nerve narrowly margined with brown interiorly; disk pale brownish-yellow; *Cuneus* pale brownish-yellow; *Membrane* gray; inner marginal nerve pitchy-black; cell-nerves yellowish. *Legs* brown, clothed with short black hairs; *thighs* spotted with black, more or less in longitudinal rows, and somewhat confluent; 1st and 2nd pairs with a very short, blunt spine before the apex; 3rd beneath, cut off obliquely before and to the apex; *tibiæ* piceous at the base, spotted with black; *tarsi;* 3rd joint and *claws* piceous.

Length, 3¼ lines.

The above description has been made from a single example taken by the Rev. T. A. Marshall, in the New Forest, but we cannot give the date. Kirschbaum says June and July.

Species 2.—LOPOMORPHUS FERRUGATUS.

MIRIS FERRUGATUS, *Fall.* Hem. Suec. i, 129, 2 (1829); *Schill.* Arb. und Veränd. 52 (1845); *Flor*, Rhyn. Liv. i, 439, 11 (1860).

LOPUS — *H. Schf.* Wanz. iii, 46, fig. 263 (1836); *Meyer*, Caps. 39, 2 (1843); *Sahlb.* Geoc. Fen. 89, 2 (1848); *Kirschb.* Caps. 36, 12 (1855).

The ♂ in developed examples brownish-pink; ♀ pale pink, clothed with long, fine yellow or brownish-red hairs.

♂ *Head* black; *Crown* with two streaks, often extending from the base, along the inside of the eyes, terminating at the base of the antenniferous processes, and a narrow line down the centre of the clypeus, clear yellow; *Face* black, sides of all the lobes yellowish. *Antennæ* piceous, clothed with short, stout, pitchy-black hairs, especially the 1st joint, which is as long as the pronotum; the base and a broad streak on the outside, black; 2nd cylindrical, 2½ times as long as the 1st, in the middle reddish-brown; 3rd pitchy-black, about ¾ the length of the 2nd; 4th pitchy-black, half as long as the 3rd. *Rostrum* brownish or brownish-yellow, tip piceous.

Thorax.—Pronotum anteriorly black; posteriorly reddish; anterior margin in the centre yellowish; sides yellowish-white, broadest at the hinder angles; disk with a large, triangular, dusky-yellowish patch, its apex at the anterior margin. *Scutellum* black, with a reddish-brown spot at the base on either side the yellow central line, equidistant from it and the basal angles; frequently the apical half of the central line is enlarged into a triangle, and the two basal spots joined by a yellow line. *Elytra: Clavus;* inner margin pitchy-black, a little widest at the base; *Corium;* anterior margin, as far as the cuneus, pale yellow; *Cuneus* long and narrow; *Membrane* gray, the inner marginal nerve pitchy-black; cell-nerves pale brownish or yellowish; a little below the cuneus is a dusky brown streak. *Legs* ochreous-brown, clothed with short black hairs; *thighs* with black spots more or less

in longitudinal rows, and somewhat confluent; *tibiæ* with a few scattered black spots; *tarsi;* 2nd and 3rd joints, and occasionally the apex of the 1st and *claws*, pitchy-black.

♀ *Head* yellow; *Crown* with 2 blackish or brownish streaks, extending from between the eyes on either side the yellow central line to the end of the clypeus; base of the antenniferous processes margined with black; behind the eyes a broad piceous streak; *Face* as in the ♂. *Antennæ* not so long as the body, reddish-brown; 1st and 2nd joints much stouter than in the ♂; thickly clothed with short, stiff, black hairs; 1st joint slightly curved; the base narrow, and on the inside black; 2nd somewhat tapered to the apex.

Thorax.—Pronotum anteriorly piceous; posteriorly pale pink; sides irregularly, and the centre broadly pale-yellowish. *Scutellum* pale yellowish; basal angles pale pink; sides narrowly black. *Elytra* as in the ♂, but with the *membrane* paler. *Legs* as in the ♂, but stouter, yellowish; extreme apex of all the *tibiæ* blackish and more thickly clothed with short black hairs than in the ♂. The other characters as in the ♂.

In undeveloped examples the elytra are extremely short, barely reaching beyond the 3rd abdominal segment, and without any trace of a membrane; they diverge after leaving the scutellum, and are acutely rounded at the apex; *Clavus* bright pink, anterior margin of the *corium* broadly pale yellowish-white, the remainder bright pink. *Connexivum* broad, recurved, yellowish-white; upperside of the abdomen pink-brown, the centre broadly pale-yellowish or greenish throughout its entire length. All the other characters as in developed examples.

Length, 4 lines.

In general appearance and markings this species bears a strong resemblance to *dolobratus*, but the following characters will assist in pointing out the difference.

The ♂ of *ferrugatus* is never so brightly coloured as that of *dolobratus;* it is more slender, has a smaller head, more prominent eyes, and a shorter anterior margin to the thorax. The ♀ of *ferrugatus* may be at once known by the great thickness of the 2nd joint of the antennæ. In undeveloped examples, at least in all we have examined, *ferrugatus has no membrane whatever*, whilst *dolobratus* has the membrane rudimentary, and with a single cell.

This is an abundant species amongst grass, &c., on the margins of fields, and in woods, and is easiest obtained by sweeping. It occurs

in company with *dolobratus*, in July, and has been found at Weybridge, Eltham, &c. The developed form, especially of the ♀, is somewhat scarce.

Species 3.—Lopomorphus dolobratus.

Cimex dolobratus, *Lin.* S. N. v, 730, 103 (1767); *Scop.* Ent. Carn. 135, 392 (1763); *Schrank*, Enum. 285, 549 (1781).
Miris abbreviatus, *Wolff*, Ic. Cim. 116, 110, p. 11, fig. 110, *a—f* (1800).
— lateralis, *Wolff*, Ic. Cim. 115, 109, p. 11, fig. 109, *a—b* (1800) *Fab.* S. R. 254, 3 (1803).
— dolobratus, *Fab.* S. R. 253, 1 (1803); *Fall.* Hem. Suec: i, 128, 1 (1829); *Hahn*, Wanz. ii, 75, fig. 160 (1831); *Zett.* Ins. Lap. 280, 1 (1839); *Schill.* Arb. und Veränd. 52 (1845); *Flor*, Rhyn. Liv. i, 437, 10 (1860).
Phytocoris dolobratus, *Burm.* Handb. ii, 267, 5 (1835).
Lopus — *H. Schf.* Wanz. iii, 45, figs. 261 & 262 (1836); *Meyer*, Caps. 38, 1 (1843); *Sahlb.* Geoc. Fen. 88, 1 (1848); *Kirschb.* Caps. 36, 11 (1855).
Leptopterna dolobrata, *Fieb.* Europ. Hem. 244 (1861).

♂, *in developed examples* reddish-orange, brownish-yellow, or dusky yellow. Somewhat more thickly clothed, and the hairs longer than in *ferrugatus*.

Head black; *Crown* with two streaks on the inside of the eyes, terminating at the base of the antenniferous processes, a short line down the centre of the clypeus, and two spots at the back of the head, clear yellow; *Face* black; the central lobe margined with, and the side lobes in front, yellowish. *Antennæ* black, as long as the body; 1st joint cylindrical, as long as the pronotum, gently swelled out on the inside beyond the base and somewhat curved; 2nd cylindrical, 3 times the length of the 1st; 3rd more than half the length of the 2nd; 4th half the length of the 3rd.

Thorax.—Pronotum black; a somewhat fusiform central line expanding into a wider triangular spot anteriorly, the centre of the anterior margin, and the sides (broadest at the hinder angles) yellow. *Scutellum* black, a central line generally widened at the depression into a triangular patch which extends to the apex, yellow. *Elytra:*

Clavus; extreme base, inner margin, and claval suture narrowly black; *Corium;* anterior margin, as far as the cuneus, pale yellow; 1st nerve sometimes black at the base; between the 1st nerve and the claval suture (in reddish-orange examples) brown-red; in brownish-yellow, or dusky-yellow examples, fuscous, darkest at the apex, posterior margin yellow; *Cuneus* paler than the corium; *Membrane* fuscous black; below the cell with a darker cloud, inner marginal nerve black; cell-nerves yellow; nerve of the inner cell, and base of the membrane, narrowly black. *Legs* clothed with longish black hairs; *thighs* pitchy-black, or ochreous-brown; in the former case, with a few scattered ochreous-brown patches; in the latter, with black spots more or less in longitudinal rows, and somewhat confluent; *tibiæ* piceous, or ochreous-brown; base pitchy black; on the inside a deep fuscous line, on which is 5 or 6 black spots; apex deep fuscous; *tarsi* and *claws* black.

Length, 4—4½ lines.

In undeveloped examples.—Head of the ♀ yellow; *Crown* with a transverse line between the eyes, a central line extending from the base to the centre, where it divides, and passes down the clypeus to the base of the antenniferous processes, and a streak behind the eyes, black; *Face* as in developed examples. *Antennæ* ochreous-brown; extreme base and apex of the 1st joint, ⅔rds of the 2nd, and 3rd and 4th pitchy-black.

Thorax.—Pronotum yellow, sides paler, and with a more or less broad black streak extending from behind the inside of the eyes across the entire disk; generally it spreads over the callosities so that the posterior space enclosed between the streaks assumes a pentagonal shape. *Scutellum* yellow; basal angles and 2 short streaks on either side the centre, black. *Elytra: Clavus;* inner margin, as far as, or a little beyond the apex of the scutellum, a short streak at the extreme base, and the inside of the claval suture (very narrow), black; *Corium;* anterior margin yellowish white; between the 1st nerve and the claval suture more or less brown, darkest at the apex; *Cuneus* short, abbreviated; *Membrane* fuscous, rudimentary, with a single cell; a streak on the inner margin, and a few spots below the nerve of the cell, pitchy-brown; cell-nerve pale yellowish. *Legs* ochreous-brown, or yellowish; *thighs* on both sides with 2 rows of black spots more or less interrupted and confluent; base of the 3rd pair black, on the upper side with 2 rows of 6 to 8 black spots, sometimes confluent; *tibiæ* with a few piceous

spots on each side, a little below the base; apex black; *tarsi* and *claws* black.

Length, 4 lines.

Very plentiful by sweeping amongst nettles, grass, &c., in woods and fields. It has been taken at Highgate, Lee, Eltham, and Weybridge in June and July.

Family 4.—PHYTOCORIDÆ.

Genus 1.—Miridius, *Fieb.*

Longish oval; viewed from the side almost a parallelogram.

Head; Crown horizontal, slightly convex, almost level with the upper margin of the eyes; *Clypeus* short, convex; apex in a line with the short antenniferous processes, the latter in a line with the middle of the eyes; *Face;* central lobe produced, long, stout, convex; side lobes short, rounded outwardly. *Antennæ;* 1st joint long, stout, somewhat cylindrical, narrowed at the base, as long as the pronotum and ½ the head; 2nd, 1½ times longer than the 1st; perceptibly thinner, and slightly stoutest at the base; 3rd and 4th almost filiform, 3rd ½ as long as the 2nd. *Eyes* small, somewhat prominent; viewed from above hemispherical; from the side, short, oval. *Rostrum* long, slender, almost reaching to the middle of the abdomen; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, with a transverse channel in front, forming a narrow collar; posterior margin twice as broad as the anterior one; anterior margin straight, angles acute; sides straight; hinder angles short, rounded, slightly raised; posterior margin almost straight, rounded towards, and at the hinder angles; disk flattish convex, deflected to the head. *Scutellum* triangular, almost equilateral, raised above the clavus, with a transverse channel near the base; anterior portion flat in the middle, deflected to the transverse channel; hinder portion convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, flattish convex, slightly deflected at the junction with the cuneus and membrane; *Cuneus* long, triangular, somewhat narrow. *Sternum: Prosternum*; xyphus triangular, equilateral, sides margined, apex

rounded; *Mesosternum* long, sides flattish, convex above, and with a deep central channel; posterior margin rounded, indented in the middle; *Metasternum* in the centre almost semicircular, margin somewhat keeled. *Legs* long, stout; *tarsi* short; 3rd joint of the 3rd pair longer than the 2nd; 1st half as long as the 2nd.

Species 1.—Miridius quadrivirgatus.

Miris 4-virgatus, *Costa*, Cent. (1852).
Miridius quadrivirgatus, *Fieb.* Europ. Hem. 258 (1861).

Yellowish, or yellowish-white, clothed with short, fine, golden-yellow hairs.

Head; Crown with a brownish, or brownish-pink streak on each side the centre, extending over its entire length; occasionally the base of the antenniferous processes, a short streak on the middle of the central lobe, and another under each eye, going to the base, brownish, or brownish-pink. *Antennæ* yellowish; 1st joint frequently brownish, with longitudinal rows of brownish or pink spots, more or less confluent, and somewhat thickly clothed with almost erect, stoutish, yellow or brown hairs; beyond the base gently curved on the inside for about ⅓rd its length, then parallel to the apex; 2nd and 3rd pale brownish; apex of the 3rd narrowly, and the 4th entirely pale piceous. *Rostrum* piceous; 1st joint and base of the 2nd yellow.

Thorax.—Pronotum in front with a transverse channel forming a somewhat raised collar; a little behind this is a second channel, to which the disk is deflected; the space between the 2 channels somewhat deeply and transversely wrinkled; on each side the centre, and in a line with those on the head, is a brownish or brownish-pink streak, carried over the entire disk; sides with a brownish or brownish-pink streak widening or dividing in two as it reaches the posterior margin; disk thickly and finely punctured. *Scutellum* with a brownish, or brownish-pink line on each side the centre. *Elytra: Clavus;* inner margin, suture, and a streak on the inside of the nerve brownish or brownish-pink; *Corium;* anterior margin pale throughout its entire length; 1st nerve pale yellowish-white; towards the apex the colouring spreads on either side into a long, narrow triangle,

having its base at the cuneus; the spaces between the margin and the 1st and 2nd nerves more or less brownish, or brownish-pink, darker on either side the pale triangle; *Cuneus* yellowish or pink, the base and side next the membrane pale; *Membrane* hyaline, slightly iridescent; cell-nerves yellowish, the outer one margined with brown on either side; a streak below the cells to the apex, and the inner margin, pale brownish. *Sternum* with a blackish line on each side. *Legs* yellowish or brownish; frequently all the thighs are thickly covered with pink spots, more or less confluent, giving them a marbled appearance; *tibiæ* sparingly clothed with short, stout, somewhat spinose, reddish or brownish hairs; apex piceous; *tarsi;* apex of the 3rd joint, and *claws* pitchy black.

Abdomen; upperside brownish, or brownish-yellow; underneath yellowish, with 2 pitchy-brown streaks on the sides, the broadest one next the connexivum; margin of the latter yellow.

Length, 4 lines.

A few specimens taken at Deal by sweeping dwarf sallows in August. It appeared to be very local. Dr. Power has also taken this species.

Genus 2.—PHYTOCORIS, *Fall.*

Longish oval, or somewhat parallel.

Head vertical in front; as broad as, or broader across the eyes, than long; *Crown* flattish, deflected, level with or a little below the upper margin of the eyes; *Clypeus* convex; apex a little produced, in a line with, or a little lower than, the base of the *antennæ;* antenniferous processes very short, immediately in front of the eyes; *Face;* central lobe not prominent, shortish, stout, convex; side lobes short, stout, rounded outwardly. *Antennæ* as long as, or longer than, the body, slender, almost filiform, the 1st joint only thickened and of variable length, generally as long as the pronotum and half the head; 2nd $1\frac{3}{4}$ to 2 times the length of the 1st; 3rd $\frac{1}{2}$ as long as the 2nd; 4th more than $\frac{1}{2}$ the length of the 3rd. *Eyes* more or less prominent; viewed from above hemispherical; from the side short, oval. *Rostrum* reaching beyond the 3rd pair of coxæ; 1st and 2nd joints of almost equal length, the 1st stout, reaching to the end of the xyphus of the prosternum; 3rd and 4th together as long as the 2nd; 3rd longer than the 4th; 4th about $\frac{1}{2}$ the length of the 2nd.

Thorax.—Pronotum short, trapezoidal, with a transverse channel in front forming a collar, behind which are 2 more or less distinct callosities; anterior margin straight, 2 to 2½ times shorter than the posterior one; sides straight or slightly concave; hinder angles rounded; posterior margin convex, indented in the middle, rounded towards and at the hinder angles; disk convex, deflected towards the head. *Scutellum* longish, triangular, convex, raised above the clavus, and with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* somewhat convex, deflected to the corium; *Corium;* sides margined; disk flattish convex, horizontal; cuneus and membrane deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular; sides margined; apex rounded; *Mesosternum* convex, short, elevated posteriorly, and with a deep central channel; posterior margin rounded, indented in the middle; *Metasternum* somewhat convex, central angle obtuse. *Legs* long, somewhat slender; 1st and 2nd pairs of almost equal length; 3rd much the longest and with thickened thighs, their tibiæ thickened below the base; apex slender; *tarsi* short, slender; 1st joint shortest, ½ the length of the 2nd; 2nd and 3rd subequal.

Species 1.—PHYTOCORIS DISTINCTUS.

Black, clothed with short white hairs; all the *tibiæ* with 3 white bands.

Head black; *Crown* with a broad white streak between the eyes; *Face;* central lobe white, base and a V-shaped patch black; side lobes black. *Antennæ* shorter than the body, black; 1st joint sparingly clothed with white hairs; on the inside a white streak extending from the base almost to the apex; 2nd narrowly white at the base, beyond the middle a reddish-brown band; 3rd pale reddish at the base. *Rostrum* pale yellowish-white, tip piceous.

Thorax.—Pronotum; collar white, with a black spot on each side of the centre; callosities grayish-white; posterior margin narrowly white. *Scutellum* deflected from the base to the transverse channel; basal angles and apex white. *Elytra; Clavus* slightly convex, deflected to the corium; *Corium* with an indistinct pale patch of an irregular form nearly opposite the middle of the claval suture and

another at the apex, somewhat rhomboidal, between the anterior margin and the posterior inner angle; *Cuneus*, with a roundish white spot at the base near the anterior margin, the latter rounded at the base, leaving a small but distinct notch; inner angle black, below which is a short white streak; apex black; *Membrane* black, with 2 white spots on the anterior margin, the 1st immediately below the apex of the cuneus; lower half of the outer cell and the disk irregularly spotted with white, more or less confluent; below the apex of the cells a large triangular white spot joined to a more or less well defined, curved streak; outer cell-nerve and apex white; inner cell-nerve black; margin next the cuneus narrowly white. *Legs* black, clothed with short white hairs; *thighs;* extreme base pale; 1st and 2nd pairs thickly and irregularly spotted with white, more or less confluent, and with 2 diagonal white bands; a broad white streak extends from the base halfway along the middle of the underside, and several more or less confluent white spots towards the apex; *tibiæ* with long, fine, somewhat spinose, white hairs; 1st and 2nd pairs with a broad white band at the base, another in the middle, and a third before the apex; the basal ones divided longitudinally on the upper and underside by a narrow black line; the middle ones divided on the upperside only; 3rd pair with a white band a little above, another a little below the middle, and a third before the apex; 1st divided longitudinally on the upperside by a narrow black line; 2nd with a few small black spots; between the base and the 1st band a few small white spots; knees white on the sides; *tarsi* black; *claws* brown.

Length, 3½ lines.

We have only seen two specimens, one taken on a white poplar at Blackheath in August, which was forwarded to Dr. Fieber, who agrees with us that it is a good species, and nearly allied to *P. Populi;* the other taken by Mr. Bold at Gosforth, near Newcastle-on-Tyne, by beating foliage in September.

Species 2.—Phytocoris tiliæ.

Lygæus tiliæ, *Fab.* S. R. 237, 169 (1803).

Phytocoris — *Fall.* Hem. i, 85, 17 (1829); *Kirschb.* Caps. 39, 18 (1855); *Flor,* Rhyn. Liv. ii, 599, 5 (1861); *Fieb.* Europ. Hem. 260, 10 (1861).

— populi, *Meyer,* Caps. t. 7, 1 (1843).

Pale-green or whitish, with dark-gray or black markings, and thickly clothed with irregular patches of white and black hairs intermixed; 2nd joint of the *antennæ* and all the *tibiæ* with black bands.

Head; Crown and *Face* whitish, covered with long white hairs; antenniferous processes black. *Antennæ* black; 1st joint sparingly clothed with stout, longish, brown or black, erect hairs; with 3 or 4 oblong white spots on the upper side, and the apex sometimes narrowly piceous; 2nd with a white band at the base, and another in the middle of almost equal width; 3rd narrowly white at the base. *Rostrum* pale yellowish-white, the tip piceous or black.

Thorax.—Pronotum; sides black; hinder angles raised; posterior margin with an interrupted black line and 4 to 6 tufts of black hairs; generally as the line approaches the hinder angles it curves round and joins on to the inside of the side line along which it extends about midway; or the entire disk is black, with the collar and a U-shaped patch attached to it yellowish-white, or greenish. *Scutellum* with a slight central keel; centre of the disk slightly flattened; sides very steep; apex deflected; on each side the base of the deflection a short oblique black streak, generally continued up the sides of the central keel; basal angle piceous or black. *Elytra: Clavus;* apex black; disk frequently with 2 large black spots placed immediately above and below the scutellar angle, and 2 lesser ones between the latter and the black apex; or, the entire disk is pale, the apex alone black, or the 2 large spots are joined by a wider or narrower streak, or the 2 lesser ones are joined; *Corium;* anterior margin spotted with black, more or less confluent; the apex black; disk with a large irregular shaped black patch (sometimes divided) immediately opposite or joined to the 2 large spots on the clavus, and forming, with them and some of the spots on the anterior margin, a band; apex more or less clouded with black, always leaving a large pale triangular spot next the cuneus; or frequently the entire disk is devoid of markings except a small black, triangular spot next the anterior margin, a little below the apex of the scutellum and a black Λ-shaped piece at the apex bordering the pale triangle; *Cuneus;* apex and a short streak at the base of the inner margin black; *Membrane* hyaline; the inner margin to a little beyond a line with the tip of the cuneus narrowly, and the nerve of the inner cell broadly black; base and apex of the outer cell, the inner one

entirely, base of the membrane next the inner margin, a small, somewhat triangular spot a little below the apex of the cuneus, and the apex of the anterior margin pale blackish; disk thickly powdered with pale blackish atoms more or less confluent; cell-nerves, apical third of the nerve green or pale. *Legs* pale yellowish; apical third of the 1st and 2nd pair of *thighs* on the upper and under edges more or less spotted with black; 3rd pair at the apex broadly, and an oblique band, black; the upper edges spotted with black throughout nearly their entire length; the lower side of the apex more or less pale; *tibiæ* with small brownish or blackish spots, in each of which is set a long, white, somewhat spinose hair; 1st pair with 2 bands and the apex black; base pale; 2nd with 3 black bands; base and apex pale; 3rd with 3 black bands, the base narrowly pale and the bands generally spotted with white; *tarsi* brownish; 1st and 3rd joints piceous or black; *claws* brown.

Length, $2\frac{3}{4}$—3 lines.

Not an uncommon species, on palings, &c., throughout the London district, in July and August.

Species 3.—PHYTOCORIS DUBIUS.

Grayish-yellow, clothed with short silver-white hairs. *Antennæ;* 2nd joint black; base and a narrow band beyond the middle white; *tibiæ* with 3 blackish bands.

Head.—*Clypeus* with 4 pairs of narrow, transverse, dark streaks on each side, between the eyes, the upper one frequently connected in the middle; apex of the side lobes black; *Face* pale; central lobe with a black V-shaped patch at the base, and another towards the apex, its extremities in a line with the black apex of the side lobes of the clypeus; side lobes along the upper margin broadly black. *Antennæ* black; 1st joint with long, fine, erect, pale hairs, base narrowly and several spots of irregular size, white; 2nd, at the base, and a narrow band beyond the middle, white; 3rd, at the base narrowly white, or reddish-white. *Eyes* black. *Rostrum* pale; tip piceous.

Thorax.—*Pronotum;* sides broadly black; posterior margin white, in the middle with a small triangular patch; within the posterior margin 2 somewhat lunate black patches, extending from the black

margin of the sides to the centre. *Scutellum* brown, with a few irregular white spots; basal angles, and a spot on each side before the apex, black; a narrow central line, and a small rhomboidal patch at the apex, white. *Elytra; Clavus* pale at the base; inner margin very narrowly brown, with a few small, darker spots; apex narrowly black; suture pale from the apex almost as far as in a line with the scutellar angle; disk with an irregular, broad, black streak on either side the pale nerve, extending nearly for an equal distance below and above the scutellar angle; the nerve with 2 or 3 brown spots joining the streaks, next the base a few small, black spots; *Corium;* anterior margin, with 2 large, and 5 to 6 smaller, somewhat square, spots, and apex, broadly black; along the inner margin of the 1st nerve an interrupted black line; base with a large triangular black patch, extending as far as in a line with the scutellar angle, interrupted by a large, somewhat square, and several small white spots; next the claval suture a more or less interrupted broad black patch; the bifurcation of the 1st nerve at the apex exteriorly margined with black, the space between white; *Cuneus* broadly gray at the base; inner angle, apex, and the inner margin throughout half its length, black; *Membrane* pale; disk, especially towards the apex, thickly covered with more or less confluent black spots and patches of irregular size; a little below the apex of the cuneus a large triangular black patch, its apex joined to a short black line below the inner cell-nerve; inner marginal nerve piceous; cell-nerves; outer one and apex white; inner one broadly black; base and apex of the outer cell black; disk with several minute black spots; apex of the inner cell interiorly margined with black. *Legs* grayish-white, clothed with fine, somewhat erect, white hairs; *thighs* pale at the base; 1st and 2nd pairs along the centre of the inner and outer sides narrowly, and along the upperside with a broad, more or less interrupted, black streak; 3rd, along the upper and underside and apex, black, more or less spotted with white; before the apex a pale diagonal band; *tibiæ* with short, fine, somewhat spinose, white hairs; 1st and 2nd pairs with 3 black bands, 1st below the base, 2nd in the middle, 3rd at the apex; 3rd with a broad blackish-gray band at the base, another beyond the middle, and a 3rd before the apex; anterior margin thickly covered with minute black spots throughout its entire length; *tarsi;* 1st joint brown, 2nd yellowish, 3rd black; *claws* brown.

Abdomen.—Upperside brown; margin of the segments yellowish-

white; margin of the connexivum white; underneath pale, clothed with short, white hairs, with a narrow streak along the sides and connexivum black; margin of the segments broadly white.

Length, $3\frac{1}{2}$ lines.

We have only seen a single example of this insect, which we forwarded to Dr. Fieber for determination, who returned it as distinct from *P. Tiliæ*, *populi*, and *dimidiatus*, but nearest to *Tiliæ* and *dimidiatus*.

It was taken at Darenth Wood, on a plum tree, in June.

Species 4.—PHYTOCORIS DIMIDIATUS.

PHYTOCORIS DIMIDIATUS, *Kirschb.* Caps. 122, 2 (1855).
— LONGIPENNIS, *Flor*, Rhyn. Liv. ii, 601, 6 (1861).
— SATURATA, *Fieb.* (MS.) (1861).

Dark or pale grayish-yellow, clothed with depressed, curled, silver-white hairs, intermixed with somewhat erect black ones. *Antennæ;* 2nd joint brownish, with a broad pale band in the middle; *tibiæ* with 3 brown bands.

Head.—*Crown* yellow, sometimes with a reddish tinge. *Antennæ;* 1st joint yellow, clothed with long, erect, silver-white hairs; on the inside with several dark brown spots, more or less confluent; 2nd brownish, with a broad yellowish band in the middle, base narrowly white, apex broadly black; 3rd and 4th black, base and extreme apex of the 3rd white. *Eyes* black; in the ♂ larger than in the ♀, and extending for a considerable distance on to the crown. *Rostrum* yellow; tip brown.

Thorax.—*Pronotum;* sides brown, the colour spreading into a large triangular patch as it approaches the narrowly white posterior margin; within the latter 5 or 6 black or brown spots frequently joined in front; sometimes the disk, with the exception of the collar and callosities, is grayish-black or brown. *Scutellum* sometimes with a reddish tinge; basal angles and a spot in the middle of the anterior portion brown; hinder portion with 2 brown streaks springing from the sides before the apex, and converging as they approach the transverse channel; apex and a central line pale. *Elytra: Clavus,* inner margin pale; apex narrowly black; disk sometimes almost entirely pale, or with a long triangular streak, composed of

brown spots, between the inner margin and the nerve, or entirely brown, with the exception of a space next the inner margin, base narrowly, nerve as far as the scutellar angle, and 2 or 3 spots on the nerve; *Corium;* anterior margin with several small brown spots throughout its entire length; disk with a broadish brown band, broadest next the claval suture, more or less spotted with gray, the upper edge almost in a line with the scutellar angle; inner margin between the band and the posterior angle with a brown streak, more or less interrupted with gray spots; within the anterior margin, at the apex, a short brown streak, and within the inner posterior angle a largish brown spot, the two converging and enclosing a large, pale, rhomboidal patch within the bifurcation of the 1st nerve; apex of the latter with a short brown streak; inner angle at the cuneus with a small black spot; *Cuneus* pale yellowish-gray or grayish-yellow, sometimes with a reddish tinge; base narrowly white; apex broadly blackish, with several small gray spots; extreme apex very narrowly pale; inner margin, near the middle, with a small black spot; *Membrane* white, somewhat iridescent, with numerous small blackish spots towards and at the apex, more or less confluent, and forming irregular patches; a little below the apex of the cuneus, and extending to the apex of the anterior margin, a black, triangular patch, generally divided by an irregular, broad pale streak; inner marginal nerve pale; cell-nerves; outer one and apex white; inner one black; outer cell, towards the base broadly, at the apex narrowly, black; disk with several minute black spots, more or less confluent; inner cell black. *Sternum: Meso-sternum* brownish above, sides pale, and with a comma-shaped streak at the posterior margin; *Metasternum* centre frequently red. *Legs* pale yellowish, clothed with long, somewhat erect, fine, white hairs; *thighs* pale at the base; 1st and 2nd pairs with several large, somewhat square, brown spots along the upper and under sides; 3rd, upper and under sides spotted with brown nearly to the base; towards the apex brown, with a pale diagonal band before the latter, and several pale spots of irregular size, somewhat confluent, and giving the thighs a marbled appearance; extreme apex pale; *tibiæ* with long, fine, pale brown, somewhat spinose hairs; 1st and 2nd pairs with 3 blackish or brownish bands, the 1st below the base; apex frequently brownish; 3rd with 3 brown bands, the 1st at the base, 2nd in the middle, and the 3rd before the apex; the 2 latter sometimes divided longitudinally, on the inside, by a pale line; fre-

quently the band next the apex is obsolete, and the entire apical portion from the 2nd pale band brownish-yellow; outer margin with several small brown spots throughout its entire length; *tarsi* brownish-yellow; 3rd joint piceous; *claws* reddish-brown.

Length, 3—3½ lines.

The *P. saturata*, Fieb. (MS.), has somewhat of a reddish tinge, and the markings browner and more decided than in the typical specimens.

Not an uncommon species, and has, perhaps, hitherto been mistaken for gray examples of *P. Tiliæ*. It is, however, narrower, more parallel, with much longer antennæ, and generally yellower than the palest examples of that species.

We have found it on palings at Blackheath, and elsewhere in the London district, in August.

Species 5.—PHYTOCORIS CRASSIPES.

PHYTOCORIS CRASSIPES, *Flor*, Rhyn. Liv. ii, 606, 8 (1861).

Dark gray or dark grayish-yellow, clothed with depressed, curled, white hairs, intermixed with somewhat erect black ones. *Antennæ;* 2nd joint in the middle more or less distinctly pale; *tibiæ* with 3 blackish or brownish bands, frequently with a brown-pink tinge.

Head grayish or brownish-yellow; *Crown* sometimes with a reddish tinge, or with a few minute reddish or brownish spots; *Clypeus* brownish, with several minute and narrow transverse lines on either side the centre; side lobes immediately in front of the antenniferous processes with a round white spot; *Face;* central lobe black or brown-pink, the base with a triangular whitish or yellowish-white patch; side lobes with a pink line along their upper margin. *Antennæ;* 1st joint black, grayish-black, or with a brown-pink tinge, clothed with long, erect, silver-white hairs, and with several large, more or less confluent, white spots, giving it a marbled appearance; 2nd black, with a more or less distinct white band beyond the middle, or the middle more or less indefinitely pale brownish-yellow; base narrowly white; 3rd and 4th black, 3rd narrowly white at the base. *Eyes* black. *Rostrum* yellow; 4th joint black.

Thorax.—Pronotum; collar and callosities generally brownish-yellow, the latter frequently with a small black spot in the centre; posterior margin narrowly white; within the latter an irregular, narrow, black streak, frequently interrupted in the middle. *Scutellum* brownish-yellow; basal angles generally brown; hinder portion with 2 black or brown streaks springing from the sides before the apex, and converging as they approach the transverse channel; central line and a small rhomboidal patch at the apex pale. *Elytra; Clavus* at the base more or less pale; apex narrowly black; disk along the inner margin broadly pale, in which are 1 or 2 dark gray spots; nerve pale; claval suture narrowly pale; *Corium;* anterior margin with 6 or 7 short streaks, and the apex black; 1st nerve pale, more or less spotted with brownish or dark gray; near the base, and adjoining the 1st nerve, a somewhat large, pale patch, and beyond the middle a larger one, the space between forming an undefined dark band; the triangular space between the bifurcation of the 1st nerve at the apex pale; inner nerve of the bifurcation more or less broadly black, the outer one more or less pale; *Cuneus* brown or grayish, with several small paler spots; base narrowly pale; apex and anterior margin more or less spotted with black; extreme apex very narrowly pale; anterior margin towards the base frequently reddish; *Membrane* white, somewhat iridescent, thickly covered with very minute black spots and patches, more or less confluent, especially towards the apex, leaving only a clear space below the cells; anterior margin with a somewhat square black spot a little below the apex of the cuneus; inner marginal nerve pale; cell-nerves whitish or yellowish-white; inner cell-nerve black; outer cell at the base broadly, apex and along the inner cell-nerve narrowly, black; disk with several minute, irregular, black spots; inner cell frequently blackish. *Sternum: Prosternum;* sides broadly brown; angles and xyphus pale, sometimes greenish; *Mesosternum* brown, centre of the posterior margin frequently pale or greenish; *Metasternum;* sides brown, centre frequently pale or greenish. *Legs; coxæ* pale; 2nd and 3rd pairs with a brown spot on the outside at the base; *fulcra* pale; 1st pair narrowly brownish or brownish-pink at the apex; *thighs* pale; on the underside spotted with black, brown, or brown-pink throughout their entire length, upperside spotted for $\frac{3}{4}$ths their length; 3rd pair next the apex and along the upperside broadly black, brown, or brown-pink, with a broad, pale, diagonal band a little before the apex, and several large, irregular spots, more or less

confluent, giving the thighs a marbled appearance; extreme apex pale; *tibiæ* with long, fine, pale brown hairs; 1st pair with 3 black or brown bands, the 3rd one at the apex; base pale, sides below the knees with a very short brown streak; the 2 upper bands with a few minute white spots; 2nd pair with 3 black or brown bands; base and apex pale; knees on the underside brown; the 2 upper bands generally with a few minute white spots; 3rd pair with 3 black or brown bands, the 1st at the base; 1st and 2nd spotted with white; 3rd before the apex generally indistinct; apex pale; knees pale; *tarsi* yellowish or brownish-yellow; 1st joint darker, 3rd black; *claws* reddish-brown.

Abdomen underneath brown, sparingly clothed with short yellowish hairs; centre more or less distinctly yellowish or brownish-yellow.

Length, 2¾—3 lines.

Probably this is the species which has hitherto been considered by collectors in this country as *P. Populi* (from which insect it is difficult to separate), and we are disposed to this view from the fact of all our specimens having been examined by Dr. Fieber, and of our never having met with the latter species. According to Fieber and Flor, *Populi* is somewhat scarce on the Continent, occurring but singly. *P. crassipes* is rather common, and has been taken at Dartford Brent, by sweeping, in August; also on apple trees.

Species 6.—PHYTOCORIS DIVERGENS.

MIRIS LONGICORNIS, *Wolff*, Ic. Cim. 155, p. 15, fig. 149 (1800).
PHYTOCORIS ULMI, *Fall.* Hem. Suec. i, 89, 25 (1829).
— LONGICORNIS, *Burm.* Handb. ii, 269, 10 (1835).
— DIVERGENS, *Meyer*, Caps. 44, 3, p. 1, fig. 1 (1843); *Kirschb.* Caps. 39, 19 & 108 (1855); *Flor*, Rhyn. Liv. i, 415, 2 (1860); & ii, 594, 2 (1861); *Fieb.* Europ. Hem. 259, 6 (1861).

Brownish-red, thickly and irregularly covered with yellow hairs in small patches, and intermixed with longer and more erect black ones.

Head.—Crown very convex, with a short channel between the eyes; *Face;* central lobe brown. *Antennæ;* basal joint yellowish.

white on the upper side, marbled with brown-red, and sparingly covered with long, stout, black hairs; extreme base red, apex dusky; 2nd and 3rd joints pale brownish-yellow; base of the 2nd pale yellowish, apex perceptibly thickened; 4th piceous. *Rostrum;* basal joint red, 2nd, 3rd and 4th yellowish, apical half of the latter piceous.

Thorax.—Pronotum; sides slightly concave; behind the collar are two callosities, joined in front by a narrow transverse keel; posterior margin narrowly reddish-yellow, with a short depression at the hinder angles; disk with a transverse, broad, pitchy-black or black streak next the posterior margin. *Scutellum* frequently with a piceous spot on each side the apex. *Elytra* of the ♂ longer than the abdomen; *Clavus* generally darker than the corium; the extreme apex black; the nerve pink or brownish-pink, with 4 or 5 pale reddish-yellow spots, at irregular intervals, down its length; *Corium;* anterior margin reddish yellow, more or less thickly and irregularly spotted with brown or brown-pink; at its junction with the cuneus brown; disk reddish-yellow, with irregular patches of brown or brown-pink, more or less confluent, sometimes terminating (especially in the ♀) in a short, oblique, dark-brown line across from the 1st nerve *down* to the basal angle of the membrane; *Cuneus* red or brown pink, darkest at the apex, broadly pale at the base next the outer angle, and with a dark-brown spot at the inner basal angle; *Membrane* blackish, the inner margin as far as in a line with the tip of the cuneus pitchy black; on the anterior margin are 2 short, curved, grayish-white streaks, the upper end at the tip of the cuneus; the outer cell, and the space below it to the apex, thickly spotted with grayish-white, more or less confluent, and run into little irregular streaks; cell-nerves red. *Legs; thighs* of the 1st and 2nd pairs reddish or brownish-yellow, or yellowish towards the apex, with pale brown spots more or less confluent; hinder pair brown or dark brown-red for ⅔rds their length from the apex; thickly spotted on both sides with yellowish white, and always with one irregular band of the same colour a little way from the apex; base yellowish; extreme apex yellowish-white; *tibiæ* pale yellowish-white; 1st pair with 2 rings and the apex broadly brown; 2nd pair with a very narrow ring at the base below the knee; apex narrowly brown; hinder pair at the base broadly dark brown, spotted with yellowish-white; the knee on either side pale, extreme apex often brown; all the tibiæ with somewhat distant small brown or blackish spots, in each of which is a stout, longish, black or brown

hair; *tarsi* yellowish, apex of the terminal joint black; sometimes the 1st joint is slightly piceous; *claws* reddish-brown.

Abdomen underneath dark reddish-brown.

♂, length, 3—3½ lines.

The ♀ is oval in form; the elytra extend but a little way beyond the abdomen, and in consequence the insect has a stunted appearance.

♀, length, 2½—3 lines.

This species has, no doubt, hitherto been confounded by collectors in this country with *P. Ulmi.*, to which it bears a great likeness. The following characters will at once enable any one to separate them. In *P. Ulmi* the antennæ are much shorter than in *P. divergens;* the head and thorax have a pale line down their centres; the corium has a distinct, large, pale, rhomboidal spot adjoining the cuneus and the hinder thighs have always 2 broadish yellow-white, irregular streaks, almost forming bands.

It is widely distributed, and has been taken at Newport, South Wales, Darenth Wood, amongst black-currant bushes, and other places in the London district, by beating, in July and August.

Species 7.—Phytocoris Ulmi.

Cimex Ulmi, *Lin.* S. N. 503, 110 (1767).
Miris — *Fab.* S. R. 256, 17 (1803).
Phytocoris Ulmi, *H. Schf.* Wanz. iii, 9, fig. 234 (1836); *Meyer*, Caps. 43, 2 (1843); *Kirschb.* Caps. 40, 20 (1855); *Flor*, Rhyn. Liv. i, 416, 3 (1860) & ii, 593, 1 (1861); *Fieb.* Europ. Hem. 259, 5 (1861).

Brownish, brownish-red, or reddish-yellow, thickly clothed with short yellow hairs.

Head.—*Crown* convex, with a central line, and generally the margins of the clypeus and a line on the inside of each eye, pale yellow. *Antennæ;* basal joint brown or brownish-pink, sparingly clothed with short, fine, almost erect, yellow or brown hairs; on the upperside with pale yellow spots, and generally, on the underside at the base, with a short piceous streak; 2nd and 3rd joints yellowish-brown; 2nd at the base pale yellow, immediately followed by a narrow blackish or brownish band; 4th piceous; occasionally the apex of the 2nd joint narrowly, and the apical half

of the 3rd, are piceous. *Rostrum;* 1st and 2nd joints yellowish; 3rd and 4th, and sometimes the apical half of the 2nd, piceous, or dark pitchy.

Thorax.—Pronotum; sides almost straight, hinder angles very slightly raised; the posterior margin pale yellowish-white, somewhat depressed; disk with two callosities behind the collar; a short central line, and one on each side, in a line with the eyes, terminating behind the callosities, pale yellow. *Scutellum* with a pale yellow central line and a brown streak on either side the apical portion sometimes uniting and leaving only the apex pale. *Elytra* of the ♂ longer than the abdomen; *Clavus;* inner margin brown, extreme apex black; disk brown, leaving the sides pale; *Corium;* anterior margin spotted with brown, at its junction with the cuneus piceous; 1st nerve at the base on the inside, at the apex on the outside, a line next the claval suture, and the apical portion between the 1st nerve and the claval suture, pitchy-brown; immediately below this and between the 1st nerve and the anterior margin is a large pale triangle, having its base on the base of the cuneus; *Cuneus* reddish-brown or reddish-yellow, darkest at the apex; the base with a pale triangle, its apex on the inner margin terminated by a brown spot, and forming, with the triangle on the corium, a rhomboidal patch; *Membrane* hyaline, slightly iridescent; the inner margin, to a little beyond a line with the tip of the cuneus, piceous; the inner cell, a triangular spot underneath it to the tip of the cuneus, a short curved streak, and a triangular patch next the apex of the anterior margin, and numerous irregular spots, dark gray; generally the central portion below the cell is more or less clear; cell-nerves reddish. *Sternum: Prosternum;* xyphus pale; sides white or yellowish-white, with a narrow streak near the outer margin, and the angles, broadly red; *Mesosternum* brown or reddish, sides broadly white or yellowish-white; *Metasternum;* sides brown or reddish, with a white or yellowish-white band nearly in the middle. *Legs; coxæ* brown or reddish, with a white or yellowish-white band in the middle; apex pale; *fulcra* yellowish-white, with a brown or reddish spot on the upperside; *thighs* yellowish; 1st and 2nd pairs thickly covered with more or less confluent, brown spots; 3rd pair dark brown or reddish-brown, thickly and irregularly covered with small white spots, and with 2 larger, somewhat triangular ones, on the upperside forming half bands; extreme apex pale yellowish-white; *tibiæ* yellowish; 1st and 2nd pairs at the base reddish-brown, 1st pair at the apex broadly

piceous; in the middle and between this and the base 2 brown or piceous bands; 2nd at the apex and a narrow band a little below the base piceous; 3rd pair with a broad band at the base and the apex narrowly piceous; all the *tibiæ* with small, distant brown spots, in each of which is set a longish, stout, spinose hair; *tarsi* yellowish; apex of the terminal joint black; occasionally the basal joint is pale piceous; *claws* brown.

Abdomen underneath brown or blackish, sparingly clothed with short yellowish hairs; sides more or less spotted with white.

Length, 3—3½ lines,

An abundant species everywhere, in August and September, on brambles, &c.

Family 5.—DERÆOCORIDÆ.

Genus 1.—Deræocoris, *Kirschb.*

Longish oval, or elongate.

Head short, vertical in front, wider across the eyes than long; *Crown* short, more or less convex; *Clypeus* convex, the apex in a line with, or a little longer than, the base of the antennæ; antenniferous processes very short, immediately adjoining and on the lower half of the eyes; *Face;* central lobe long, more or less convex; side lobes short, narrow, rounded outwardly. *Antennæ* shorter or longer than the body, slender, somewhat filiform, occasionally with the 3rd and 4th joints slightly thickened; the 1st joint only stout, shorter than, or as long as, the pronotum; 2nd 2 to 3 times as long as the 1st; 3rd ½ to ⅔rds as long as the 2nd; 4th ½ to ⅔rds the length of the 3rd. *Eyes* prominent; viewed from above hemispherical, from the side long oval. *Rostrum* reaching to the 2nd or 3rd abdominal segment; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, with a transverse channel in front, forming a collar; anterior margin straight, 2½ to 3 times smaller than the posterior one; sides straight; hinder angles rounded, sometimes slightly raised; posterior margin convex, sometimes indented in the middle; disk convex. *Scutellum* longish triangular, convex, raised above the clavus, with a transverse channel at the base. *Elytra* generally much longer than the abdomen,

Clavus convex, deflected to the corium; *Corium;* anterior sides margined, sometimes reflexed; disk flat or slightly convex, horizontal as far as the junction with the cuneus and membrane, which are more or less deflected; *Cuneus* more or less long, triangular. *Sternum: prosternum;* xyphus triangular, concave, with an acute margin; *Mesosternum* convex, posterior margin notched in the middle; *Metasternum* convex, central angles prominent. *Legs* long, somewhat slender; 1st pair generally shorter than the 2nd, 3rd longest; *thighs* of the 3rd pair thickened, frequently flattened on the sides; *tibiæ* of the 3rd pair slightly bent; *tarsi* short, sometimes stout; the joints of nearly equal length, or the basal joint shortest.

Species 1.—Deræocoris fulvomaculatus.

Cimex fulvomaculatus, *De G.* Mem. iii, 294, 33 (1773).
Phytocoris — *Fall.* Hem. Suec. i, 88, 24 (1829); *Zett.* Ins. Lap. 273, 10 (1839); *Kolen.* Mel. Ent. ii, 109, 84 (1845).
Capsus — *H. Schf.* Wanz. iii, 50, fig. 267, & 81, fig. 362 (1836); *Meyer*, Caps. 96, 84 (1843); *Sahlb.* Geoc. Fen. 109, 40 (1848).
— (Deræocoris) fulvomaculatus, *Kirschb.* Caps. 49, 36 (1855).
— (Capsus) — *Flor*, Rhyn. Liv. i, 505, 21 (1860).
Calocoris fulvomaculatus, *Fieb.* Europ. Hem. 253, 5 (1861).

♂ elongate, narrow, slightly oval; ♀ elongate, oval, slightly indented in the middle of the anterior margin of the elytra. Brownish, or yellowish-brown; thickly clothed with fine golden-yellow hairs. *Antennæ* somewhat filiform; 2nd joint slightly thickest at the apex.

Head black; *Crown* with a very short channel between the eyes; a more or less large spot on the inside of each eye, and the base frequently yellowish; *Face* vertical; central lobe black or brown, longish, convex, somewhat narrow; side lobes black, short, stoutish; sides of the face yellowish. *Antennæ* yellowish or brownish-yellow; 1st and 2nd joints clothed with fine, very short black hairs; base and apex of the 1st joint narrowly, and apex of the 2nd broadly, black; 3rd and 4th black or pitchy-black; base of the 3rd pale yellow. *Rostrum* yellowish, reaching to the 3rd pair of coxæ; tip black.

Thorax.—Pronotum with a more or less interrupted channel behind the collar; sides slightly concave; hinder angles raised; posterior margin convex, indented in the middle; disk convex, transversely wrinkled, black, with a more or less large central streak sometimes extending from the transverse channel to the posterior margin, and the latter within the angles yellowish, or the disk yellow; the space between the collar and the transverse channel, 2 large somewhat triangular patches, often extending from the latter to the posterior margin, and the hinder angles, black. *Scutellum* yellowish, transversely wrinkled, transverse channel black; or entirely black, with the basal angles, and sometimes the apex, reddish yellow. *Elytra: Clavus;* inner margin and apex narrowly black; between the nerve and the suture somewhat pale; *Corium;* anterior margin narrowly black, within the latter pale; beyond the middle, and between the 1st nerve and the anterior margin, a large, somewhat triangular, fuscous white patch, the colour having the appearance of being rubbed or washed out; *Cuneus;* at the base a triangular patch, its apex on the inner margin brownish, or brownish-orange near the outer basal angle; inner margin piceous; apex broadly black; centre with a yellow trapezoidal patch, more or less broadly orange-yellow towards and at the inner margin; *Membrane* blackish; below the apex of the cuneus a somewhat lozenge-shaped, yellowish patch, followed by a large triangular black one extending to the apex of the anterior margin; inner marginal nerve brown; cell-nerves brownish-yellow or reddish, exteriorly with a yellowish margin; cells yellowish. *Sternum;* sides reddish or brown-red. *Legs: coxæ* and *fulcra* yellowish, the latter brownish posteriorly; *thighs* reddish-yellow, with longitudinal rows of brown spots extending throughout their entire length, the spots largest on the underside of the 3rd pair; towards the apex of the latter, one or more irregular brown bands; *tibiæ* yellowish, with minute brown spots and short, stout, somewhat spinose, brown hairs; apex blackish; *tarsi* brownish-yellow; 1st joint brown, 3rd at the apex black; *claws* black or brown.

Length, $3\frac{1}{4}$ lines.

A plentiful species at Darenth, on black-currant bushes, and occasionally on birch trees, in June.

Species 2.—Deræocoris striatellus.

Lygæus striatellus, *Fab.* S. R. 236, 164 (1803); *Panz.* F. G. 93, 17 (1801—1805).
Miris — *Wolff*, Ic. Cim. 156, t. 15, fig. 150, *a*, *b* (1804).
Phytocoris — *Fall.* Hem. Suec. i, 84, 15 (1829); *Hahn*, Wanz. ii, 133, fig. 218 (1833); *Zett.* Ins. Lap. 272, 8 (1839); *Kolen.* Mel. Ent. ii, 113, 89 (1845).
Capsus — *Meyer*, Caps. 94, 81 (1843); *Sahlb.* Geoc. Fen. 105, 30 (1848).
— (Deræocoris) striatellus, *Kirschb.* Caps. 56, 50 (1855).
— (Capsus) — *Flor*, Rhyn. Liv. i, 492, 14 (1860).
Calocoris striatellus, *Fieb.* Europ. Hem. 251, 1 (1861).

Longish oval; yellow; clothed with very short, pale yellowish-white hairs. *Antennæ* somewhat filiform.

Head with a black, piceous, or red-brown central streak, extending from between the eyes to the apex of the clypeus, and a reddish or reddish-brown streak on each side the central one, curving round, and generally uniting immediately behind it; antenniferous processes margined with black; *Face* vertical; central lobe convex, longish, somewhat stout; base and a central streak piceous; side lobes short, somewhat stout, blackish at the base. *Antennæ* yellowish; 3rd and 4th joints and the apex of the 2nd brownish or piceous. *Rostrum* reaching to the 1st or 2nd abdominal segment; yellowish or reddish-yellow; tip black.

Thorax.—Pronotum with 2 callosities behind the collar; hinder angles very slightly raised; posterior margin convex, almost straight in the middle; disk convex, very finely punctured, much deflected; posterior margin of the collar generally 2 spots behind each callosity, and a posterior band (within the margin) broadly black; sometimes the spots are united, and the posterior band more or less interrupted. *Scutellum* finely wrinkled transversely, black at the base as far as the transverse channel. *Elytra: Clavus;* inner margin and a streak on each side the nerve black; *Corium;* anterior margin and a streak on both sides of the 1st and 2nd nerves black; apex of the anterior margin, a triangular patch between the furcation within the end of the 1st nerve, and the inner angle, black; *Cuneus* yellow; apex black; anterior margin rounded at the base,

leaving a small but distinct notch; *Membrane* gray, with a large, square, pale spot below the apex of the cuneus; between the underside of the cells and the pale spot, the inner margin of the latter, and a triangular patch on the anterior margin reaching to the apex, blackish; inner marginal nerve black; cell-nerves yellow; large cell pale; base narrowly, and the apex more or less broadly, blackish. *Legs* yellow, clothed with very short black hairs; *thighs* more or less red; 1st and 2nd pairs generally with 2 pale bands; 3rd with a single band before the apex; *tibiæ* with fine, black, spinose hairs; 3rd pair bent below the base; apex of all the pairs black; 2nd and 3rd frequently reddish at the base; *tarsi* and *claws* blackish.

Abdomen.—♂, underside black, with a yellow streak along the sides; ♀ yellow; sides and middle reddish-brown.

Length, 3½ lines.

A common species, on trunks of trees and palings, in May and June. It has occurred at Lewisham, Bexley, Darenth Wood, and other places.

Species 3.—Deræocoris bipunctatus.

Cimex pabulinus, *Scop.* Ent. Carn. 132, 384, var. 2 (1763).
Lygæus bipunctatus, *Fab.* S. R. 235, 158 (1803).
Phytocoris — *Fall.* Hem. i, 78, 2 (1829); *Burm.* Handb. ii, 270, 14 (1835); *Zett.* Ins. Lap. 271, 1 (1839).
Capsus — *H. Schf.* Wanz. iii, 79, fig. 298 (1836); *Meyer*, Caps. 51, 10 (1843); *Sahlb.* Geoc. Fen. 101, 20 (1848).
— (Deræocoris) bipunctatus, *Kirschb.* Caps. 60, 58 (1855).
Capsus (Capsus) — *Flor*, Rhyn. Liv. i, 498, 17 (1860).
Calocoris — *Fieb.* Europ. Hem. 254, 10 (1861).

♂ elongate, somewhat narrowed at the membrane; ♀ longish oval. Green, or yellowish-green, clothed with fine, short, black hairs, sparingly intermixed with pale ones.

Head.—Antennæ; 1st and 2nd joints clothed with very short black hairs; 1st joint green; 2nd, 3rd, and 4th more or less brownish yellow. *Rostrum* reaching to the 2nd abdominal segment; pale brownish-yellow; tip piceous.

Thorax.—Pronotum with 2 callosities behind the collar; hinder

angles very slightly raised; posterior margin convex, indented in the middle; disk convex, much deflected, very finely punctured and wrinkled transversely, with 2 black spots near the callosities, placed closer together than in *C. Chenopodii*. *Elytra: Corium;* the ♂ frequently with a small black spot on the membrane-suture, about the middle of the outer cell; *Cuneus* yellowish-green; *Membrane* blackish; the inner margin as far as a line with the tip of the cuneus and the anterior margin narrowly black; cell-nerves green or yellow; apex of the outer nerve exteriorly margined with brown; in addition, the ♂ generally has a black spot at the outer angle of the outer cell next the cuneus. *Legs* greenish or brownish-yellow, clothed with very short, fine black hairs; all the *thighs* with a few stout, almost erect, black hairs; 3rd pair with several brown spots at the apex; *tibiæ* piceous at the apex; 3rd pair slightly bent, with short, stout, spinose black hairs; *tarsi* brownish; apex of the 3rd joint and the *claws* piceous.

Abdomen.—Upperside black; *connexivum* brownish-yellow or yellowish; underside clothed with fine, short, yellowish-white or silvery hairs.

Length, $3\frac{1}{4}$—$3\frac{3}{4}$ lines.

A common species, on the borders of fields and woods, and at the bottom of hedge-banks, amongst nettles, &c., by beating and sweeping, in June and July.

Species 4.—Deræocoris striatus.

Cimex striatus, *Lin.* F. S. 960 (1761); *Scop.* Ent. Carn. 133, 387 (1763); *Lin.* S. N. 730, 105 (1767); *De G.* Mem. iii, 191, 29, t. 15, figs. 13—15 (1773); *Schr.* Enum. 284, 547 (1781).

Miris — *Wolff*, Ic. Cim. 37, t. 4, fig. 37, *a*, *b* (1800); *Fab.* S. R. 255, 15 (1803)

Capsus — *Panz.* F. G. 93, 22 (1801—1805); *Meyer*, Caps. 94, 80 (1843); *Sahlb.* Geoc. Fen. 97, 11 (1848).

— (Deræocoris) striatus, *Kirschb.* 49, 37 (1855).

Phytocoris striatus, *Fall.* Hem. Suec. i, 83, 14 (1829); *Hahn*, Wanz. ii, 134, fig. 219 (1833); *Burm.* Handb. ii, 267, 4 (1835); *Am. et Serv.* Hém. 279, 1 (1843); *Zett.* Ins. Lap. 272, 7 (1845).

Polymerus (cyllecoris) striatus, *Kolen.* Mel. Ent. ii, 103, 76 (1845).

CAPSUS (CARSUS) STRIATUS *Flor*, Rhyn. Liv. i, 490, 13 (1860).
PYCNOPTERNA STRIATA, *Fieb.* Europ. Hem. 262, 1 (1861).

Elongate, somewhat parallel. Black, sparingly clothed with fine, very short, somewhat erect, black hairs. *Antennæ* long; 2nd joint thickened towards the apex; 3rd and 4th perceptibly thinner than the 2nd. *Legs;* 3rd pair long.

Head.—*Crown* with a short yellow streak on the inner side of the hinder half of each eye; centre of the antenniferous processes generally yellow; *Face* vertical; central lobe long, convex, somewhat narrow, with a very short central channel at the base; side lobes short, narrow. *Antennæ;* 1st joint reddish-brown; base and apex black, sometimes entirely black; with a few stout, somewhat erect, black hairs; 2nd, 3rd, and 4th black; base of the 3rd pale yellow. *Rostrum* black, or brownish-black, reaching to the 2nd pair of coxæ; 1st joint stout.

Thorax.—*Pronotum* with 2 callosities behind the collar, divided by a short longitudinal keel, at the base of which are two deep punctures; hinder angles raised; posterior margin convex, much indented in the middle; disk convex, wrinkled transversely, and gently deflected; the centre with an oval yellow spot extending from the punctures to the posterior margin; rarely, the pronotum is yellow with the exception of the collar, callosities, hinder angles, posterior margin, and a V-shaped patch near the latter. *Scutellum* very finely wrinkled transversely; with a short keel next the apex and a short yellow streak on the sides, or entirely yellow with the exception of the base and a central line. *Elytra: Clavus;* nerve bright yellow, broadest at the base; next the suture and within the inner margin more or less dusky yellow; *Corium* within the anterior margin broadly, and 2nd and 3rd nerves yellow; 1st nerve yellow at the base; apex orange-yellow; *Cuneus* yellow, orange-yellow, or brownish-yellow; base paler, broadest at the inner angle. *Membrane* gray, with a black patch extending from below the cells to the apex of the anterior margin, or with a small pale patch between the cells and the black one; inner marginal nerve black; cell-nerves orange-yellow; cells, and frequently the exterior margin of the outer one, black. *Legs* orange-red; *thighs;* 1st and 2nd pairs generally, 3rd always, with 1 or 2 longitudinal rows of spots on both sides; 1st and 2nd pairs narrowly black at the apex; 3rd broadly black, sometimes entirely black; *tibiæ* bent below the base, and

somewhat thickly covered with short, stout, erect hairs; extreme base generally, and apex of all the pairs, black; 2nd and 3rd pairs broadly pale yellow before the apex; sometimes the basal half of the 3rd is black; *tarsi* and *claws* black; 3rd joint of the tarsi longest; 1st and 2nd of almost equal length.

Abdomen.—Upperside black; underside black, margins of the segments more or less yellow.

Length, 4½—5 lines.

We have not met with this species in any numbers. It has occurred by beating bushes and trees in open places in woods, from June to August, at Darenth Wood and Tunbridge Wells.

Species 5.—Deræocoris sexguttatus.

Cimex 6-guttatus, *Fab.* Mantiss. ii, 304, 254 (1787).
Lygæus sexguttatus, *Fab.* E. S. iv, 174, 139 (1794); S. R. 237, 173 (1803).
Phytocoris — *Fall.* Hem. Suec. i, 86, 20 (1829).
Capsus — *H. Schf.* Wanz. iii, 77, fig. 395 (1835); *Meyer*, Caps. 92, 77 (1843).
Polymerus (lophyrus), *Kolen.* Mel. Ent. ii, 106, 80 (1845).
Capsus (Capsus) sexguttatus, *Flor*, Rhyn. Liv. i, 494, 15 (1860).
Calocoris — *Fieb.* Europ. Hem. 252, 4 (1861).

♂ elongate, somewhat narrow; ♀ elongate, somewhat oval. Black, very sparingly clothed with fine, short, yellowish hairs next the ciliated anterior margin of the corium, only perceptible in very fine specimens; *Antennæ* somewhat filiform.

Head shining; a streak along the inside of the eyes, antenniferous processes, and base of the antennæ narrowly yellowish; *Face* vertical; central lobe long, convex; side lobes short, somewhat stout. *Eyes* deep chocolate-brown, or reddish-brown. *Rostrum* reaching to the 2nd abdominal segment; basal joint black, extreme base on each side underneath, generally red; remaining joints brown; tip black.

Thorax.—*Pronotum* with 2 callosities behind the collar; sides very slightly concave; hinder angles somewhat raised; posterior margin convex, slightly indented in the middle; disk convex; thickly and finely punctured posteriorly; the collar, a somewhat lunate patch on each side, an oval patch in the middle, narrowed into a fine line as it passes between the callosities and joins the collar,

yellow. *Scutellum* finely wrinkled transversely, and slightly depressed before the apex; base to, or a very little beyond the transverse channel, black; remainder yellow. *Elytra; Clavus* convex; somewhat deeply, irregularly, and coarsely punctured, with a short yellow streak at the apex, between the nerve and the suture; *Corium* thickly punctured; anterior margin throughout its entire length yellow; base between the 1st and 2nd nerves, as far as in a line with the apex of the clavus streak, and a short streak at the apical inner angle, forming with the clavus streak an X-shaped patch, yellow; *Cuneus* orange-yellow; apex black; *Membrane* blackish; below the apex of the cuneus a somewhat round pale spot; inner marginal nerve and cell-nerves black. *Legs* black or pitchy black; all the *thighs* generally with a longitudinal row of spots on both sides; 1st and 2nd pairs frequently pitchy yellow; *tibiæ* yellowish, clothed with very short, fine, brown hairs, and a few longer spinose ones; apex piceous; *tarsi* piceous; 3rd joint black; *claws* brown. *Abdomen;* underside; ♂ black; ♀ with a streak along the sides, and the margin of the connexivum narrowly yellowish.

Length, 3¼ lines.

This species appears to be somewhat scarce. Dr. Power has taken it at Thornton Reservoir, Leicestershire, in July.

Species 6.—Deræocoris binotatus.

Lygæus binotatus, *Fab.* E. S. iv, 172, 130 (1794); S. R. 235, 159 (1803).
Phytocoris — *Fall.* Hem. Suec. i, 78, 3 (1829).
Capsus — *H. Schf.* Wanz. iii, 77, fig. 296 (1836); *Meyer*, Caps. 92, 78 (1843).
— (Deræocoris) binotatus, *Kirschb.* Caps. 59, 56 (1855).
— (Capsus) — *Flor*, Rhyn. Liv. i, 499, 18 (1860).
Oncognathus — *Fieb.* Europ. Hem. 246 (1861).

Elongate, narrow, almost parallel. Yellowish or greenish-yellow, clothed with fine, short, whitish hairs; *Antennæ* somewhat filiform.

Head with 2 spots on the crown at the hinder margin of the eyes, a narrow streak along the inside of each eye, and the margin of the clypeus, piceous; *Face* vertical; central lobe convex, shortish, black or piceous; side lobes short, stoutish, narrowly piceous on the inner margin. *Antennæ;* 1st joint dusky green, clothed with fine, short, black hairs; 2nd, 3rd, and 4th brownish. *Eyes* large, semicircular above; viewed from the side, oval. *Rostrum* reaching to the 3rd

abdominal segment, yellowish; tip brown; 1st joint reaching beyond the xyphus of the prosternum.

Thorax.—Pronotum with 2 callosities behind the collar; sides slightly concave; hinder angles slightly raised; posterior margin convex, indented in the middle; disk convex; thickly and somewhat deeply punctured, and transversely wrinkled, with 2 large, trapezoidal black patches, extending from behind the callosities to the posterior margin; or, the disk black, with the exception of the collar, sides, posterior margin narrowly and a central line, yellow. *Scutellum* with a short, narrow, black streak on the sides at the base. *Elytra; Clavus* black at the base on each side the nerve; *Corium* between the 1st and 2nd nerves, at the apex, more or less piceous or black; inside of the 2nd nerve about half its length, next the apex, and outside of the 3rd nerve about half its length, next the base, black; *Cuneus* yellowish or greenish-yellow; *Membrane* fuscous; a long triangular patch, extending from below the cells to the apex of the anterior margin and the cells, darker; inner marginal nerve pitchy black; cell-nerves yellowish or reddish-yellow, with a pale margin exteriorly. *Legs* yellowish or brownish-yellow, clothed with very fine, short, black hairs; *tibiæ* with fine, short, spinose hairs; apex of all the pairs piceous or black; *tarsi* and *claws* black.

Length, $2\frac{1}{2}$—3 lines.

A common species. To be met with by sweeping and beating flowers, bushes, &c., in June, July, and August. It has been taken in the New Forest; at Llantrissant and Newport, North Wales; Bexley, Darenth, &c.

Species 7.—Deræocoris seticornis.

Cimex seticornis, *Fab.* Mantiss. ii, 305, 269 (1789).
Lygæus seticornis, *Fab.* E. S. iv, 179, 160 (1794).
Miris tibialis, *Wolff*, Ic. Cim. 117, 111, t. 12, fig. 111, *a*, *b* (1802).
Capsus seticornis, *Fab.* S. R. 244, 18 (1803); *Sahlb.* Geoc. Fen. 108, 38 (1818).
Miris seticornis, *Wolff*, Ic. Cim. 158, 152, tab. xvi, fig. 152, *a*, *b* (1804).
Phytocoris apicalis, *Hahn.* Wanz. i, 220, fig. 114 (named *lateralis* on the plate), (1831).
— seticornis, *Fall.* Hem. i, 88, 23 (1829); *Burm.* Handb. ii, 269, 12 (1835); *Zett.* Ins. Lap. 273, 11 (1839); *Kolen.* Mel. Ent. ii, 114, 91 (1845).
Capsus (Deræocoris) seticornis, *Kirschb.* Caps. 58, 54 (1855).
Capsus (Capsus) lateralis, *Flor*, Rhyn. Liv. i, 503, 20 (1860).
Calocoris — *Fieb.* Europ. Hem. 251, 19 (1861).

Elongate. Black, covered with fine, golden-yellow hairs; *Antennæ;* 2nd joint thickened towards the apex; 3rd and 4th slightly thickened.

Head shining; *Antennæ;* 3rd and 4th joints reddish or yellowish-brown. *Rostrum* reaching beyond the 3rd pair of coxæ, brown; tip black.

Thorax.—Pronotum shining, with 2 callosities behind the collar; the posterior margin, frequently a central line extending from the latter to the callosities and the collar, yellow; disk much deflected, thickly and finely punctured, and somewhat transversely wrinkled. *Scutellum* transversely wrinkled. *Elytra; Clavus* transversely wrinkled; *Corium;* anterior margin black; base yellow as far as in a line with the apex of the scutellum; or the entire width between the anterior margin and the 1st nerve from the base to the apex yellow; or the entire disk brownish-yellow, the apex between the 1st nerve and the claval suture more or less pitchy black or black; disk thickly punctured, and somewhat transversely wrinkled; *Cuneus* very finely wrinkled transversely; red, orange-yellow, or yellow; the inner angle at the base and the apex black; or the entire cuneus black; *Membrane* blackish, the inner margin and the nerves black; cells, and a narrow margin round the nerves exteriorly, pale. *Legs* yellowish or brownish-yellow; all the *thighs* black; their apex narrowly brownish-yellow; *tibiæ* with long black spinose hairs; their apex, and not unfrequently the base of the 3rd pair below the knee pitchy black or black; *tarsi* yellowish or brownish-yellow; the 3rd joint, and sometimes the 1st, piceous or black; *claws* piceous or brown.

Length, 4 lines.

Several specimens were taken by Dr. Power at Thorness Bay, and Luccombe, Isle of Wight, in July and August, 1861.

Species 8.—Deræocoris Chenopodii.

Miris lævigatus, *Panz.* F. G. 93, 21 (1793); *Wolff,* Ic. Cim. 36, tab. 4, fig. 36, *a, b* (1800); non Lin.

Phytocoris Chenopodii, *Fall.* Hem. Succ. i, 77, 1 (1829); *Kolen.* Mell. Ent. ii, 113, 90 (1845).

Capsus — *Sahlb.* Geoc. Fen. 100, 18 (1848); *Meyer,* Caps. 51, 11 (1843).

Capsus (Deræocoris) Chenopodii, *Kirschb.* Caps. 57, 51 (1855).
— (Capsus) Chenopodii, *Flor*, Rhyn. Liv. i, 501, 19 (1860).
Calocoris Chenopodii, *Fieb.* Europ. Hem. 255, 12 (1861).

♂ elongate, wide; ♀ somewhat oval. Gray-greenish, or pale yellowish-green, thickly clothed with very pale golden-yellow hairs; 3rd and 4th joints of the antennæ thickened.

Head.—Antennæ; 1st joint clothed with short, black hairs, with a few scattered black spots, in each of which is set a short, stout, almost erect, black hair; 1st and 2nd pale brownish-yellow; 3rd and 4th, and the apex of the 2nd, reddish; base of the 3rd pale. *Rostrum* reaching to the 2nd abdominal segment, pale brownish-yellow; tip black.

Thorax.—Pronotum with 2 callosities behind the collar; disk somewhat thickly and finely punctured, with 2 black spots near the hinder margin, almost in a line with the basal angles of the scutellum; frequently the spots are wanting. *Scutellum* finely wrinkled transversely, with a piceous or blackish streak down each side of the centre. *Elytra: Clavus;* the whole, or the apical half of the inner margin, the nerve, and frequently the space between the nerve and the inner margin piceous; *Corium;* anterior margin and basal half of the 1st nerve black or pitchy black; frequently the 1st nerve broadly, and a somewhat longish triangular patch at the apex between the 1st and 2nd nerves piceous; *Cuneus* pale greenish-white; extreme apex frequently piceous; *Membrane* hyaline or pale gray; cell nerves yellowish or brownish, narrowly margined on both sides with pale yellow; inner margin to a little beyond the tip of the cuneus and the apex of the inner cell-nerve, piceous. *Legs* pale brownish-yellow; all the *thighs* with black spots, thickest on the 3rd pair next the apex, with a few scattered, fine, almost erect, black hairs; *tibiæ* with black spots, in each of which is set a short, stout, black, spinose hair; 3rd pair slightly bent; *tarsi* brownish-yellow; apex of the 3rd joint piceous or black; *claws* brown.

Abdomen; upperside brown or black; apex frequently, and the connexivum, greenish.

Length, 3½—4 lines.

After death, the insect generally changes in colour to brownish-yellow, or yellowish, the markings becoming more or less decided; the cuneus, as in life, remaining always distinctly palest. It is a

most abundant species amongst *Chenopodium*, *Ononis sponosa*, and other plants growing by the waysides, or on the borders of fields, or woods, and to be met with from July to September, by beating or sweeping.

Species 9.—DERÆOCORIS FERRUGATUS.

CIMEX ROSEOMACULATUS, *De Geer*, Gesch. Ins. iii, 193, 32 (1780).
CAPSUS CRUENTATUS, *Villers*, L. E. 533, 188 (1789).
— RIBIS and C. ROSATUS, *Schrank*, F. B. 1149 (1801).
LYGÆUS FERRUGATUS, *Fab.* E. S. iv, 173, 132 (1794); S. R. 236, 163 (1803).
PHYTOCORIS — *Fall.* Hem. Suec. i, 86, 19 (1829); *Hahn*, Wanz. i, 204, tab. 104 (1831); *Burm.* Handb. ii, 270, 16 (1835); *Kolen.* Mel. Ent. ii, 111, 87 (1845).
CAPSUS — *Sahlb.* Geoc. Fen. 104, 29 (1848); *Meyer*, Caps. 52, 12 (1843).
— (DERÆOCORIS) FERRUGATUS, *Kirschb.* Caps. 57, 53 (1855).
— (CAPSUS) FERRUGATUS, *Flor*, Rhyn. Liv. i, 496, 16 (1860).
HOMODEMUS FERRUGATUS, *Fieb.* Europ. Hem. 249, 1 (1861).

♂ somewhat elongate, narrowed at the membrane; ♀ somewhat oval. Yellowish-green, or green, clothed with short, black hairs.

Head brownish or brownish-red, with a pale central line from between the eyes to the apex of the convex clypeus, and another on the inside of each eye, extending to the base of the antennæ; or sometimes the head is black, with the lines yellow; *Face* frequently rosy, central lobe large, stout, convex, with a short channel at the base; side lobes short, stout. *Antennæ* brown, extreme apex of the 1st, and the 3rd and 4th joints darker; 1st covered with short, fine, black hairs. *Eyes* brown, with a yellowish streak behind. *Rostrum* brownish or brownish-yellow; the tip black.

Thorax.—Pronotum with 2 callosities behind the collar, frequently connected, and with 2 deep punctures in front; occasionally the posterior margin of the callosities is piceous or black; disk thickly and coarsely punctured, more or less pale brownish, leaving a broad central streak, and the sides yellowish-green or greenish. *Scutellum* thickly and coarsely punctured, with a central, and occasionally a transverse basal line, piceous or black. *Elytra; Clavus* reddish or rosy, except the apex and the nerve, which are pale; frequently the

extreme apex is piceous; *Corium* with a streak extending from the apex about half-way along the 1st nerve, a somewhat longish triangular patch between the latter and the 2nd nerve, reddish or rosy; *Cuneus;* anterior margin somewhat piceous; *Membrane* pale smoky-gray; the inner margin, from the base to a little beyond a line with the tip of the cuneus, piceous; cell-nerves yellowish, with a small brown spot at the base of the outer cell next the outer angle, and occasionally a piceous streak below the apex. *Legs* yellowish, apex of all the *thighs* broadly brown or reddish-brown; occasionally the 3rd pair have a row of pitchy black spots on each side along the centre, and carried in an oblique direction to the upperside as they approach the apex; *tibiæ* reddish-brown, or piceous at the base and apex, and with short, stout, black hairs; *tarsi* and *claws* black.

Length, $3\frac{3}{4}$—4 lines.

A common species, taken at Mickleham, Dárenth, Folkestone, and other places, by sweeping amongst grass, &c., in June and July.

Species 10.—Deræocoris marginellus.

Miris marginellus, *Fab.* S. R. 255, 14 (1803).
Phytocoris scriptus, *Hahn,* Wanz. ii, 120, fig. 202 (1833).
Capsus (Deræocoris) marginellus, *Kirschb.* Caps. 50, 38 (1855).
Homodemus marginellus, *Fieb.* Europ. Hem. 250, 2 (1861).

Somewhat elongate. Black, clothed with fine, short, yellow hairs.

Head with a yellow streak on the inside of each eye; *Face* vertical; central lobe large, stout, convex; side lobes short, somewhat stout. *Antennæ;* 1st and 2nd joints reddish; base and apex of the 1st, and apex of the 2nd, black; 3rd and 4th pitchy black, or black; base of the 3rd yellowish-white. *Rostrum* pitchy brown; tip black.

Thorax.—Pronotum with 2 callosities behind the collar, joined in front by a short, transverse keel; sides straight; hinder angles slightly raised; posterior margin convex; disk convex, thickly and deeply punctured; collar, a central line, and a line on each side extending from the outside of the callosities to the posterior margin, within the hinder angles, yellow. *Scutellum* black. *Elytra; Clavus,* from the suture to beyond the nerve, yellow; *Corium* within the

anterior margin throughout its entire length broadly yellow; widest opposite to the apex of the clavus, and gradually narrowing as it reaches the cuneus; at the inner angle a narrow yellowish streak, carried for a little way up the outside of the claval suture; *Cuneus* yellow; slightly rounded at the base, and leaving a small but distinct notch; *Membrane* blackish; cells and a triangular patch on the anterior margin extending to the apex, darker; inner marginal nerve black; cell-nerves brownish; apex white; exterior margin of the outer cell darker. *Legs* reddish or brownish-red; apex of all the *thighs* narrowly black; *tibiæ* with short, black, spinose hairs; apex of all the pairs black; *tarsi* and *claws* brown or black.

Abdomen; underside black; stigmata white.

Length, $3\frac{1}{4}$—$3\frac{1}{2}$ lines.

We have seen but two examples of this species; one in the collection of Mr. Marshall, of Leicester, and the other received from Mr. S. Stevens; neither dates nor localities are known. Kirschbaum (Caps. 11, 38) says, "Common in June and July on various plants."

Species 11.—Deræocoris fornicatus.

Elongate, oval. Reddish-yellow, clothed with short, yellow hairs.

Head with a brownish-red central streak, extending from between the eyes to the apex of the clypeus, and one on each side curving round, and approximating immediately behind the central one; *Face* vertical; central lobe longish, convex, stout; with a reddish or reddish-brown streak down the centre; side lobes short, somewhat, stout; reddish at the base. *Antennæ* yellowish; apex of the 2nd, and base of the 3rd joint black. *Rostrum* reaching to the 3rd pair of coxæ, yellowish; tip piceous.

Thorax.—Pronotum behind the collar, with a large, deep, somewhat lunate fovea on each side the centre; sides straight; hinder angles rounded; posterior margin convex, indented in the middle; disk convex, thickly and finely punctured. *Scutellum* yellowish, finely wrinkled transversely; base, as far as the lunate fovea and a central streak, reddish. *Elytra; Clavus* somewhat convex, finely punctured; inner margin piceous; *Corium;* anterior margin and the inner margin of the 1st nerve, at the base, narrowly black; *Cuneus* slightly rounded at the base, leaving a very small but distinct notch;

apex black; *Membrane* pale, with a brownish triangular patch on the anterior margin next the apex; inner marginal nerve piceous; outer cell-nerve yellowish, inner one reddish; apex of both cells blackish. *Legs* yellowish; *tibiæ;* 1st pair clothed with fine, short, brownish hairs; apex narrowly piceous.

Abdomen reddish.

Length, 4—4¼ lines.

We have seen but a single example of this insect, taken many years ago near Durham, in June, by W. Backhouse, Esq. The specimen was submitted to Dr. Fieber for determination, who returned it with the above manuscript specific name.

Species 12.—Deræocoris ticinensis.

Capsus ticinensis, *Meyer*, Caps. 100, 88, tab. 6, fig. 1 (1843).
Calacoris — *Fieb.* Europ. Hem. 251, 15 (1861).

Elongate, slightly oval. Ferruginous red, clothed with fine, depressed, whitish hairs. *Antennæ;* 2nd, 3rd and 4th joints of almost equal thickness.

Head.—Crown brownish-red, leaving a paler margin round the eyes; *Clypeus* brownish-red, with a pale red central line; *Face;* central lobe dark brown-red. *Antennæ* ferruginous yellow. *Rostrum* reddish-yellow; tip black.

Thorax.—Pronotum somewhat coarsely punctured; on the disk, and almost in a line with the basal angles of the scutellum, 2 roundish black spots. *Scutellum* finely wrinkled transversely; hinder portion dark red. *Elytra: Clavus;* inner margin and nerve reddish, disk finely wrinkled transversely; *Corium* finely punctured, almost shagreened; towards the apex, and between the 1st and 2nd nerves, reddish; posterior margin red; *Cuneus* pale reddish-yellow, the anterior and interior margins, and base, red; *Membrane* brownish-black, round the cells a broadish, paler margin; cell-nerves red; cells pale brownish. *Legs; thighs* red, longitudinally spotted with black; on the 3rd pair at the apex the spots are somewhat irregular; *tibiæ* pale reddish-yellow, with a few depressed, somewhat spinose, black hairs; apex narrowly blackish; *tarsi* reddish-yellow; 3rd joint black, base narrowly reddish-yellow; *claws* brown-red.

Length, 3¼ lines.

We have only seen 2 examples of this insect, both of which are very imperfect, and the description is, therefore, necessarily impaired. Dr. Fieber, from whom we borrow the following part of the diagnosis, has seen and determined one of the specimens. Of the ♂ he says that there is a "longish black streak in the hinder angle of the corium, and another at the apex of the anterior margin. *Sternum* ferruginous yellow, its sides and the middle of the *Mesosternum* blackish. *Abdomen* black underneath, base and sides red; the anus with 2 large red spots."

One specimen in the collection of Mr. Dale, the other taken by Mr. Reed in Leigh Wood, Bristol. In neither case can we give the date.

Species 13.—Deræocoris infusus.

Capsus infusus, *H. Schf.* Wanz. iv, 30, fig. 381 (1837).
Phytocoris validicornis, *Bohem.* Vet. Akad. Förh. 14, 19 (1852).
Capsus (Deræocoris) infusus, *Kirschb.* Caps. 55, 49 (1855).
Megacœlum infusum, *Fieb.* Europ. Hem. 249 (1861).

Elongate, slightly oval. Reddish or orange-yellow; not clothed with hairs. *Antennæ;* 2nd, 3rd, and 4th joints of almost equal thickness.

Head with a short channel between the eyes, and an impression on the convex clypeus at the base of the antenniferous processes; *Face* vertical; central lobe convex, shortish, somewhat stout; side lobes short, stout. *Antennæ;* 1st joint with a few longish, almost erect, reddish hairs. *Rostrum* reaching to the 3rd abdominal segment; 1st joint very stout, reaching beyond the xyphus of the prosternum; 1st and 2nd reddish or reddish-yellow; 3rd and 4th yellowish; tip black.

Thorax.—Pronotum with 2 callosities behind the collar; posterior margin more or less brown; convex, indented in the middle and somewhat depressed; disk convex, very finely wrinkled transversely. *Scutellum* brown; very convex; finely wrinkled transversely; basal angles and sometimes the sides narrowly red. *Elytra; Clavus* between the nerve and the suture frequently pale brownish-yellow; *Corium;* anterior margin red throughout its entire length; disk opaque, frequently pale brownish-yellow, with a short brown streak at the

apex next the inner angle; also, generally with a black triangular patch, its apex in, and a little below, the bifurcation of the 1st nerve; *Cuneus* red or brownish-red; anterior margin rounded at the base, and slightly narrower than the apex of the corium, leaving a small but distinct notch; basal inner angle with a triangular black patch joined to, and forming, with the one on the corium, a rhomboidal patch; *Membrane* pale dusky brown; inner marginal nerve, and cell-nerves brown; the latter exteriorly with a pale margin; sometimes the inner cell-nerve is reddish. *Legs* red; *thighs* sometimes with brownish or dark red spots; extreme apex with 2 short, stout, black, spinose hairs on the upperside; in addition, the 3rd pair have a few long, fine ones; *tibiæ* with black spinose hairs; 1st and 2nd pairs yellowish, or reddish-yellow, darker at the apex; 3rd slightly thickened below the base and somewhat bent; *tarsi* yellowish or reddish-yellow, 3rd joint piceous; *claws* reddish-yellow.

Abdomen; underside reddish-yellow or reddish-brown.

Length, $3\frac{1}{2}$—$3\frac{2}{3}$ lines.

We have taken this pretty species in some numbers, by beating oak trees at Lewisham, in August. We observed it also in the collections of Mr. Dale and the late Messrs. Curtis and Ingall.

Genus 2.—PANTILIUS, *Curt.*

♂ elongate, broad, parallel; ♀ somewhat oval.

Head wider across the eyes than long; *Crown* flattish, with a deep central channel extending as far as in a line with the front of the eyes; *Clypeus* convex; apex rounded, overhanging the face; *Face* vertical; central lobe convex, longish, broad; side lobes short, somewhat stout; rounded outwardly; antenniferous processes short. *Antennæ* stout, inserted in a line with the under half of the eyes; 1st joint almost as long as the pronotum; 2nd clavate, about 3 times as long as the 1st; 3rd as long as the 1st; 4th half as long as the 3rd. *Eyes* large; hemispheric above; viewed from the side oval. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint reaching to the xyphus of the prosternum.

Thorax.—Pronotum trapezoidal, with a collar in front; sides slightly concave, wider than the collar, from behind which they are margined and rounded anteriorly; hinder angles rounded, and slightly raised; posterior margin convex, indented in the middle;

disk convex. *Scutellum* triangular, convex; sides slightly rounded, near the base, with a short, transverse channel on either side, terminating in a deep puncture. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* convex, slightly deflected at the junction with the cuneus and membrane; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, concave, margined; *Mesosternum* convex, elevated posteriorly, with a flattish central channel; posterior margin convex; *Metasternum;* sides flattish; posterior margin rounded in the middle; centre convex. *Legs* thin; somewhat long; *tarsi* short; 3rd joint longest, almost as long as the other two; 2nd joint shortest.

Species 1.—Pantilius tunicatus.

Cimext unicatus, *Fab.* Mantiss. ii, 303, 242 (1787).
Lygæus — *Fab.* E. S. iv, 170, 121 (1794); S. R. 233, 148 (1803).
Miris — *Germ.* F. Ins. Eur. 5, tab. 23 (1813).
Phytocoris — *Fall.* Hem. Suec. i, 85, 18 (1829).
Pantilius — *Curt.* Ent. Mag. i, 197 (1833).
Lopus — *Meyer*, Caps. 40, 3 (1843); *Kirschb.* Caps. 37, 13 (1855); *Flor*, Rhyn. Liv. i, 441, 1 (1860).
Conometopus tunicatus, *Fieb.* Europ. Hem. 249 (1861).

Red, brownish-red, or greenish-yellow, thickly and irregularly covered with deep black punctures, and thinly clothed with very short yellow and black hairs intermixed.

Head; margin of the antenniferous processes and clypeus narrowly black. *Antennæ* red or brownish-yellow, clothed with very short, fine, black hairs; 1st joint cylindrical, small at the base; gently curved on the inside beyond the latter, and somewhat contracted before the apex; black punctured; base, frequently with a narrow ring and the apex, black; 2nd broadly black at the apex; basal half of the 3rd pale yellow, apex blackish or brownish; base of the 4th pale yellow, apex red or brownish.

Thorax.—Pronotum with 2 callosities behind the collar; sides narrowly black; at the base, within the margin, generally yellowish. *Scutellum;* apex generally yellowish, or greenish-yellow, with a short keel. *Elytra: Corium;* anterior margin black; within the latter throughout its entire length pale yellow; apex sometimes dusky; *Cuneus;* anterior margin pale yellow, apex brownish; of the cuneus

yellow, base and apex red; *Membrane* gray or blackish, with a pale patch below the cells and the tip of the cuneus, and a darker triangular patch on the anterior margin, extending to the apex; inner marginal nerve piceous; cell-nerves red. *Legs* yellowish or greenish-yellow, clothed with short, black hairs; all the *thighs* with brown spots, more or less disposed in longitudinal rows; all the *tibiæ* reddish at the apex; *tarsi* yellowish or brownish-red; apex of the 3rd joint and *claws* darker.

Abdomen; upperside brown or black; underside yellowish or greenish-yellow; connexivum yellow; stigmata black.

Length, 4—4¼ lines.

A common species on nut-bushes and alders, at Darenth Wood, Mickleham, and other places in the London District, in August and September.

Family 6.—LITOSOMIDÆ.

Genus 1.—Litosoma.*

Somewhat elongate; slightly elliptic.

Head almost vertical in front; wider across the eyes than long; with a more or less distinct, narrow, transverse keel behind the eyes; *Crown* somewhat flat; *Clypeus* convex; apex almost in a line with the base of the antennæ; antenniferous processes very short, in a line with the lower half of the eyes; *Face;* central lobe longish, narrow, convex, projecting beyond the clypeus; side lobes short, somewhat stout, rounded outwardly. *Antennæ* shorter than the body; 1st joint stout, as long as or a little longer than the head; 2nd slightly thickened to the apex, 3 to 4 times as long as the 1st; 3rd and 4th about ½ as long as the 2nd. *Eyes* large, somewhat prominent; viewed from above almost hemispherical; from the side, oval. *Rostrum* reaching to the 2nd or 3rd pair of coxæ; 1st joint stout, as long as the head, or reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform; 1½ to 2 times broader across the posterior margin than long; anterior margin generally concave, angles rounded; sides nearly straight, or somewhat concave; hinder angles frequently raised; posterior margin concave or

* Λιτός, plain, σῶμα, body.

almost straight. *Scutellum* triangular, equilateral, sometimes raised a little above the clavus, with a deep transverse channel near the base; hinder portion flattish, or slightly convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, flattish as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* triangular, longish. *Sternum: Prosternum;* xyphus triangular, margined; *Mesosternum* convex, somewhat elevated posteriorly, depressed in the middle; *Metasternum* convex, angle shortened. *Legs* longish, thin; *thighs* somewhat stout; *tarsi* short; 3rd joint of the 3rd pair generally longest.

Species 1.—LITOSOMA VIRIDINERVIS.

CAPSUS VIRIDINERVIS, *Kirschb.* Caps. 78, 95, and 142, 13 (1855).
ORTHOTYLUS — *Fieb.* Europ. Hem. 290, 8 (1861).

♂ elongate, somewhat parallel; ♀ subelliptic. Yellowish-green, shining, clothed with long, fine, depressed, yellow hairs.

Head.—Antennæ yellowish-green, clothed with somewhat erect yellow hairs. *Eyes* blackish; viewed from above somewhat hemispherical, from the side oval. *Rostrum* greenish at the base, towards the pitchy brown tip, pale brownish-yellow.

Thorax.—Pronotum with 2 callosities behind the anterior margin, connected in front by a short transverse keel; posterior margin concave, rounded towards and at the hinder angles; disk convex, finely wrinkled transversely. *Scutellum* almost level with the clavus; from the base to the transverse channel very convex, yellowish; hinder portion convex, green, very slightly flattened in the middle. *Elytra* diaphanous, faintly wrinkled transversely; *Clavus* slightly convex, deflected to the corium; *Membrane* very pale gray, iridescent; cell-nerves bright green, sometimes with a green spot, or short streak in the outer cell, towards the middle of the outer nerve. *Legs* greenish; *thighs* with fine, long, almost erect, yellowish hairs; *tibiæ* yellowish, with fine, somewhat spinose, pale brown hairs; *tarsi* yellowish; apex of the 3rd joint and *claws*, brown.

Abdomen greenish; underside clothed with short, yellow hairs.

Length, 2½ lines.

Not an uncommon species, in July and August, in several places in the London District. We met with it abundantly on plum-trees at Darenth, in the latter month.

Species 2.—Litosoma striicornis.

Capsus striicornis. *Kirschb.* Caps. 78, 96, and 143, 14 (1855).
— (Capsus) striicornis, *Flor*, Rhyn. Liv. i, 615, 91 (1860).
Orthotylus striicornis, *Fieb.* Europ. Hem. 289, 7 (1861).

Elongate, almost parallel. Pale green, clothed with fine, depressed, pale yellow hairs. *Antennæ;* 1st joint underneath, with a longitudinal, black streak.

Head.—*Antennæ* greenish or yellowish-green, clothed with fine, short, yellow hairs; 1st joint underneath, with a longitudinal black streak. *Eyes* blackish or brown. *Rostrum* green or yellow; tip brown.

Thorax.—*Pronotum* with 2 callosities behind the anterior margin, connected in front by a short, transverse keel; posterior margin concave, slightly rounded towards and at the hinder angles; disk convex, finely wrinkled transversely. *Scutellum* raised above the clavus; anterior portion convex, deflected to the transverse channel; posterior portion convex. *Elytra* diaphanous; *Clavus;* nerve somewhat stout, and prominent; *Membrane* very pale gray, iridescent; cell-nerves bright green, frequently with a green spot in the outer cell, towards the middle of the outer nerve. *Legs* green; *thighs* clothed with fine, yellow hairs; *tibiæ* yellowish or greenish-yellow, with fine, somewhat spinose, yellowish hairs; *tarsi* yellowish or greenish-yellow; apex of the 3rd joint and *claws* brown.

Abdomen green; underneath clothed with fine, yellow hairs.

Length, 2—2⅓ lines.

Very closely allied to *L. viridinervis*, but easily distinguished from that species by the black streak on the underside of the 1st joint of the antennæ.

It has occurred sparingly at Eltham, in August, in hedges amongst sallow, &c., by beating.

Species 3.—Litosoma nassatus.

Cimex nassatus, *Fab.* Mantiss. ii, 304, 251 (1787).
Lygæus nassatus, *Fab.* E. S. iv, 174, 136 (1794); S. R. 236, 167 (1803).
Phytocoris nassatus, *Fall.* Hem. Suec. i, 80, 7 (1829); *Kolen.* Mel. Ent. ii, 117, 96 (1845); *Zett.* Ins. Lap. 272, 4 (1839).
Lygus icterocephalus, *Hahn*, Wanz. i, 149, fig. 75 (1831).
— nassatus, *Hahn*, Wanz. i, 153, fig. 78 (1831).
Capsus — *Meyer*, Caps. 50, 8 (1843); *Sahlb.* Geoc. Fen. 102, 24 (1848); *Kirschb.* Caps. 78, 98 (1855).
— (Capsus) nassatus, *Flor*, Rhyn. Liv. i, 618, 94 (1860).
Orthotylus nassatus, *Fieb.* Europ. Hem. 289, 6 (1861).

ngate; ♂ somewhat parallel; ♀ subelliptic. Green; somewhat sparingly clothed with long, fine, white hairs. *Corium* ciliate.

Head.—*Antennæ* yellowish or brownish-yellow; 1st joint frequently brownish; apex yellow, or yellow with the base piceous; apex of the 2nd sometimes brown; 3rd and 4th brown. *Eyes* black; *Rostrum* greenish or yellowish-green; tip piceous or black.

Thorax.—*Pronotum* with 2 callosities behind the anterior margin; hinder angles somewhat raised, posterior margin almost straight; disk convex, transversely wrinkled. *Scutellum* convex, raised above the clavus. *Elytra: Clavus;* inner margin and nerve dark green; suture somewhat yellowish; disk pale green, deeply punctured, and thickly covered with minute dark green spots, more or less confluent, and sometimes forming small, irregular patches; *Corium;* anterior margin generally yellowish; disk somewhat shagreened; flattish between the inner margin and the 1st nerve, then somewhat convex, and abruptly deflected to the anterior margin; the entire disk pale green, thickly covered with minute dark green spots, more or less confluent, especially between the 1st nerve and the anterior margin; 1st nerve and apex dark green; *Cuneus* green; anterior margin and apex darker; *Membrane* pale gray, iridescent; inner marginal nerve brownish; cell-nerves green or yellowish-green, exteriorly margined with brown, broadest below the apex; outer cell with a short green streak near the middle of the outer nerve. *Legs* greenish or yellowish; *tibiæ* with long, fine, pale brown, spinose hairs; apex brownish; *tarsi* brownish or brownish-yellow; apex of the 3rd joint and *claws* black.

Abdomen.—Underside greenish-yellow; the tip of the ovipositor blackish, and reaching beyond the end of the abdomen.

Length, $2\frac{3}{4}$—3 lines.

After death the head, pronotum, scutellum, anterior margin of the corium, more or less broadly, and the thighs, become bright yellow.

A common species on alders, in July. We have met with it at Lewisham, and other places in the London district.

Species 4.—LITOSOMA FLAVINERVIS.

CAPSUS FLAVINERVIS, *Kirschb.* Caps. 78, 99, & 147, 16 (1855).
ORTHOTYLUS — *Fieb.* Europ. Hem. 289, 3 (1861).

♂ elongate, almost parallel; ♀ subelliptic. Green, somewhat thickly clothed with fine, depressed, yellowish-white hairs.

Head generally orange-yellow. *Antennæ;* ♂, 1st joint brown, base black, or black with the apex brown; ♀ yellowish or brownish-yellow, with a few erect, brownish hairs; 2nd yellowish; 3rd and 4th, and sometimes the apex of the 2nd, brownish. *Eyes* large, black. *Rostrum* yellowish-green; tip pitchy-black.

Thorax.—*Pronotum* with 2 callosities behind the anterior margin, connected in front by a short, narrow, transverse keel; sides slightly concave; hinder angles raised; posterior margin convex, almost straight in the middle; disk convex, slightly flattened in the middle, transversely wrinkled; frequently the anterior portion to behind the callosities is orange-yellow. *Scutellum* convex, slightly raised above the clavus; base, as far as the transverse channel, frequently yellowish. *Elytra; Clavus* slightly convex; transversely wrinkled; *Corium;* ♂ somewhat flat from the claval suture to the 1st nerve, from thence rather convex, and suddenly deflected to the anterior margin; ♀ convex; disk transversely wrinkled; extreme base yellowish; *Cuneus;* apex ochreous-yellow; *Membrane* pale purplish-brown, iridescent, with a somewhat triangular dark patch below the cells on the anterior margin; inner marginal nerve piceous; cell-nerves yellow; apical half of the outer cell blackish. *Legs* green, clothed with yellowish-white hairs; *thighs* on the underside with a few, somewhat erect, stout, yellowish hairs; *tibiæ* towards the apex yel-

lowish; extreme apex frequently piceous; *tarsi* yellowish-brown; 3rd joint and *claws* brown.

Abdomen green; underneath somewhat shining, and clothed with yellowish-white hairs.

Length, 2½—2¾ lines.

A very abundant species, on alders, at Lewisham, in July, in company with *L. nassatus*.

Species 5.—Litosoma virescens.

♂ elongate; ♀ subelliptic. Dull green, clothed with short, white hairs, intermixed with longer, somewhat erect, black ones.

Head.—*Crown* with a depression in the centre. *Antennæ* greenish-yellow; 1st and 2nd joints clothed with very short black hairs, apex of the 1st with 2 or 3 longer, erect ones; 3rd and 4th, and apex of the 2nd, brownish. *Rostrum* yellowish; tip piceous.

Thorax.—*Pronotum* with a transverse channel behind the anterior margin, on each side its centre a deep fovea; hinder angles raised; posterior margin straight in the middle, rounded towards and at the hinder angles; disk slightly convex; *Scutellum* convex, level with the clavus. *Elytra* somewhat diaphanous; *Clavus* slightly convex; *Membrane* blackish, with a purple tinge, iridescent; outer cell-nerve black; inner one and apex yellow. Legs greenish, clothed with short, whitish hairs; *tibiæ* with longish, fine, somewhat spinose, brown hairs; *tarsi* brownish-yellow; 3rd joint and *claws* piceous or black.

Abdomen; underside greenish-yellow, clothed with fine white hairs.

Length, 2—2¼ lines.

This species is very closely allied to *L. concolor*, but may be easily separated from it by its duller appearance, the dark outer cell-nerve, and the yellow apex and inner cell-nerve. Like the other species of the genus, it changes very much in colour after death. The head becomes yellow, with a transverse brownish streak on the crown, next the hinder margin of the eyes; anterior portion of the thorax, scutellum, anterior margin of the corium and cuneus, more or less yellow; in one specimen, except the membrane, the entire insect has become pale brownish-yellow, with a few black spots next the posterior margin of the pronotum.

It appears to be very scarce, as we have only met with 3 specimens, one at Bromley, amongst grass, at the roots of broom-bushes, and 2 others at Weybridge, by sweeping, all taken in July.

The insect has been examined by Dr. Fieber, who pronounced it to be distinct.

Species 6.—Litosoma concolor.

Capsus concolor, *Kirschb.* Caps. 89, 119, & 155, 20 (1855).
Orthotylus concolor, *Fieb.* Europ. Hem. 289, 5 (1861).

♂ elongate; ♀ subelliptic. Somewhat bluish-green, thickly clothed with fine, short, silver-white, depressed hairs, sparingly intermixed with somewhat erect, stoutish, black ones.

Head generally yellowish-green. *Antennæ* yellowish or yellowish-brown, clothed with fine brown hairs; 1st joint generally greenish; 3rd, 4th, and apex of the 2nd, pale brownish. *Eyes* black. *Rostrum* greenish-yellow; tip blackish.

Thorax.—*Pronotum* green, with 2 callosities behind the anterior margin; sides almost straight; hinder angles very slightly raised; posterior margin convex, slightly indented in the middle; disk flattish. *Scutellum* convex, almost level with the clavus; base as far as the transverse channel and sides sometimes yellowish. *Elytra* somewhat diaphanous; *Corium;* apex of the anterior margin and 1st nerve generally dark green; *Membrane* slightly blackish, or with a purple tinge, iridescent; inner marginal nerve brownish yellow; cell-nerves brownish yellow, apex of the inner one greenish yellow; cells pale yellowish. *Legs* green, clothed with short white hairs; *tibiæ* greenish; towards the narrowly piceous apex yellowish, with fine, somewhat spinose, brown hairs; *tarsi* yellowish or pale brownish-yellow; 3rd joint and *claws* piceous.

Abdomen greenish or greenish-yellow; underneath clothed with fine, short, silver-white hairs.

Length, 1¾—2 lines.

This species is very closely allied to *L. flavosparsus*, but it is somewhat larger and stouter, and may readily be separated from the latter insect by the absence of the yellow spots on the elytra.

It has occurred sparingly at Weybridge, Tunbridge Wells, &c., by sweeping, in July and August.

Species 7.—Litosoma flavosparsus.

Capsus flavosparsus, *Sahlb.* Geoc. Fen. 103, 26 (1848); *Kirschb.* Caps. 89, 120 (1855).
Phytocoris — *Bohem.* Vet.-Akad. Förh. 13, 18 (1852).
Capsus (Capsus) flavosparsus, *Flor*, Rhyn. Liv. i, 582, 66 (1860).
Orthotylus flavosparsus, *Fieb.* Europ. Hem. 288, 2 (1861).

♂ elongate, somewhat parallel; ♀ subelliptic. Green, clothed with short, fine, depressed, white hairs, intermixed with stoutish somewhat erect, black ones. *Elytra* more or less spotted with yellowish-white.

Head.—Antennæ; 1st joint greenish; 2nd, 3rd, and 4th, yellowish or pale brownish-yellow. *Eyes* black. *Rostrum* green; tip black.

Thorax.—Pronotum with 2 callosities behind the anterior margin, connected by a very short transverse keel; hinder angles raised; posterior margin slightly convex, almost straight in the middle; disk slightly convex, deeply punctured. *Scutellum* convex, flattish in the centre, very slightly raised above the clavus. *Elytra* diaphanous; *Clavus* almost flat between the inner margin and the nerve, deflected from thence to the suture; inner margin and suture dark green; disk pale green, more or less spotted with yellowish-white, and with minute dark green spots, in each of which is set a stoutish, somewhat erect, black hair; *Corium* very pale green, more or less spotted with yellowish-white; anterior margin and 1st nerve dark green; disk with numerous minute dark green spots, in each of which is set a stoutish, somewhat erect, black hair; *Cuneus;* anterior and inner margins dark green; apex of the latter and the anterior basal angle pale; *Membrane* very pale brown, iridescent; inner marginal nerve pale; cell-nerves green, with a very narrow white margin exteriorly; cells green. *Legs* green; *tibiæ* with long, fine, somewhat spinose, pale brown hairs; apex very narrowly brownish-yellow; *tarsi* yellow; apex of the 3rd joint and *claws* black.

Abdomen greenish-yellow.

Length, 1¾—2 lines.

After death the head, anterior half of the pronotum, and scutellum, generally become yellow, and the elytra more or less yellowish-green.

Several specimens were taken at Southampton in September, 1862, amongst *Chenopodium*. Found also at Lee.

Species 8.—Litosoma ochrotrichus.

Orthotylus ochrotrichus, *Fieb.* (M.S.), 1864.

♂ elongate, narrow, somewhat parallel. Dark green, clothed with fine, longish, yellow hairs. *Elytra* with minute yellow spots.

Head.—Antennæ; 1st joint pale green, apex narrowly darker, with a few erect, stout, brownish hairs; 2nd yellowish, clothed with short brownish hairs; 3rd and 4th yellowish or pale brownish-yellow. *Rostrum* yellowish, base greenish; tip piceous.

Thorax.—Pronotum with 2 callosities behind the anterior margin, joined in front by a short, convex, triangular keel; sides slightly concave in the middle, widening towards the hinder angles; disk convex, transversely wrinkled, with a small, round, yellow spot, nearly opposite to the basal angles of the scutellum. *Scutellum* slightly raised above the clavus, convex from the base to the transverse channel; apical portion convex, on the sides somewhat flattened in the middle, towards the transverse channel. *Elytra* somewhat diaphanous; *Clavus* transversely wrinkled; nerve dark green; suture yellow; disk with a few minute, irregular, yellow spots; *Corium* transversely wrinkled; anterior margin narrowly dark green; disk with a few minute yellow spots, placed at irregular intervals; *Cuneus;* anterior and interior margins dark green; *Membrane* very pale brown, iridescent; inner marginal nerve pale piceous; cell-nerves green; outer cell with a small black spot near the middle of the outer nerve. *Legs* greenish-yellow, sparingly clothed with pale, depressed, brownish-yellow hairs, intermixed with a few longer, almost erect ones; *tibiæ* with short, somewhat spinose, brown hairs; *tarsi* yellow; 3rd joint and *claws* brown.

Abdomen; underside greenish yellow, clothed with short yellowish-white hairs.

Length, 2 lines.

After death the following parts become more or less yellow:—The basal joint of the antennæ, except the apex; the head, anterior portion of the thorax to behind the callosities, base of the scutellum as far as the transverse channel, elytra, so that the spots become indistinct, and also the thighs, except their tips.

We have only met with a single example, which was taken at Folkestone, in September, by sweeping amongst *Ononis spinosa*, &c.

Dr. Fieber has seen the insect, and returned it with the above specific name. He moreover observes that it is closely allied to *L. flavosparsus*, Sahlb., both in the colour and the spotting of the elytra.

Species 9.—LITOSOMA ANGUSTUS.

CAPSUS ANGUSTUS, *H. Schf.* Nom. Ent. i, 49 (1835); *Meyer*, Caps. i, 56, 19, tab. 2, fig. 3 (1843); *Kirschb.* Caps. 77, 93 (1855).

ORTHOTYLUS ANGUSTUS, *Fieb.* Europ. Hem. 288, 1 (1861).

Elongate, narrow. Yellow, thickly clothed with very short white hairs.

Head ochreous-yellow. *Eyes* black, pale behind. *Rostrum* yellowish; tip piceous.

Thorax.—Pronotum ochreous-yellow, with 2 callosities behind the anterior margin, connected by a very short transverse keel; posterior margin convex, indented in the middle. *Scutellum* convex; slightly raised above the clavus. *Elytra; Clavus* and *Corium* diaphanous; very pale yellowish, the margins and nerves darker; *Membrane* pale; iridescent; inner margin very narrowly piceous; cell-nerves white; the outer nerve exteriorly, very narrowly margined with yellowish. *Legs; tibiæ* without spinose hairs; *tarsi* brownish-yellow; 3rd joint black.

Abdomen greenish, or yellowish-green.

Length, $1\frac{3}{4}$—2 lines.

We have taken this insect on palings, and beaten it from ash trees, at Croydon, in June and July, somewhat abundantly.

Species 10.—LITOSOMA ERICETORUM.

PHYTOCORIS ERICETORUM, *Fall.* Hem. Suec. i, 105, 55 (1829).

CAPSUS — *Sahlb.* Geoc. Fen. 104, 28 (1848); *Kirschb.* Caps. 90, 122 (1855).

CAPSUS (CAPSUS) ERICETORUM, *Flor*, Rhyn. Liv. i, 587, 70 (1860).
LITOCORIS ERICETORUM, *Fieb.* Europ. Hem. 287 (1861).

Short, narrow, subelliptic. Green, clothed with somewhat erect, brownish hairs. *Head* convex between the eyes, and without a transverse keel at the hinder margin. *Legs;* 3rd pair of thighs stout.

Head.—Antennæ yellowish; 3rd and 4th joints brownish. *Eyes* large, black; viewed from above somewhat hemispherical, from the side oval. *Rostrum* reaching to beyond the 3rd pair of coxæ; yellowish; tip brown; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum with a deep transverse channel behind the anterior margin, indented in the middle; hinder angles not raised; posterior margin convex, indented in the middle. *Scutellum* convex, level with the clavus, and with a faint central keel extending from the transverse channel to the apex. *Elytra; Clavus* sparingly punctured; *Corium;* anterior margin yellowish, generally with a dark green margin on the inside; 1st nerve yellowish at the base; disk convex, slightly flattened in the middle, sparingly punctured; *Cuneus;* apex ochreous; *Membrane* pale brownish, iridescent, with a dark triangular patch on the anterior margin below the apex of the cuneus; anterior margin piceous; cell-nerves brownish-yellow. *Legs* greenish or yellowish-green; *thighs;* 3rd pair stout; *tibiæ* yellowish, with brownish, somewhat spinose, hairs; *tarsi* brownish-yellow; 3rd joint and *claws* blackish.

Abdomen greenish.

Length, $1\frac{1}{4}$—$1\frac{1}{2}$ line.

A very common species amongst heather, from July to September. It has occurred at Shirley, Weybridge, and other places in the London district.

Species 11.—LITOSOMA PRASINUS.

CAPSUS PRASINUS (*Pict.* et *Meyer*), teste, *Fieb.*
HYPSITYLUS PRASINUS, *Fieb.* Europ. Hem. 286 (1861).

Elongate. Darkish green; thickly clothed with depressed yellowish hairs.

Head yellow. *Antennæ* yellow, clothed with very fine, pale hairs; 3rd and 4th joints brownish.

Thorax.—Pronotum; callosities joined in front by a short transverse keel, with a short transverse channel in the middle, behind the latter. *Elytra: Cuneus;* margin and the suture bluish-green; *Membrane* blackish; cell-nerves bluish-green. *Legs* yellow-greenish, thickly clothed with very fine, pale hairs; *thighs* not punctured; *tibiæ;* apex yellow; *tarsi* yellow, apex brown.

Abdomen underside pale.

Length, 2 lines.

We took 2 specimens of this insect at Southend, in September, by sweeping herbage. They were sent to Dr. Fieber for determination, but, having received much injury in the journey home, we have been obliged to quote Dr. Fieber's description.

Species 12.—LITOSOMA CHLOROPTERUS.

CAPSUS CHLOROPTERUS, *Kirschb.* Caps. 89, 121, & 156, 21 (1855).
PACHYLOPS — *Fieb.* Europ. Hem. 285 (1861).

♂ somewhat elongate; ♀ subelliptic. Green, somewhat thickly clothed with fine, short, white hairs, intermixed with longish, somewhat erect, black ones. *Legs;* 3rd pair of thighs very stout.

Head yellowish-green, very wide between the eyes; *Face;* central lobe convex, somewhat prominent. *Antennæ;* 1st joint greenish or yellowish-green, with a few erect black hairs; 2nd 4 times as long as the 1st, yellowish or pale brownish-yellow; 3rd and 4th brownish. *Rostrum* short, scarcely reaching to the middle coxæ, greenish or yellowish-green; tip blackish.

Thorax.—Pronotum with 2 more or less distinct callosities behind the anterior margin; hinder angles very slightly raised; posterior margin convex, slightly indented in the middle, and somewhat depressed next the basal angles of the scutellum; disk flattish; the anterior portion to behind the callosities frequently yellowish-green. *Scutellum* convex, flattish in the centre, almost level with the clavus; base as far as the transverse channel and the sides sometimes yellowish. *Elytra; Clavus* transversely wrinkled; *Corium* somewhat flattish in the centre, convex on the sides; *Membrane*

brown, iridescent; cell-nerves and cells yellowish. *Legs* green; *thighs* very stout; *tibiæ.* greenish-yellow, with stout, somewhat spinose, black hairs; towards the apex brownish-yellow; *tarsi* brownish-yellow; 1st and 3rd joints and *claws* piceous.

Abdomen upperside green; underside greenish-yellow, thickly clothed with fine, short, white hairs.

Length, 1½—1¾ line.

Not an uncommon species, on broom, near Blackheath, and at Charlton, in July.

Family 7.—PHYLIDÆ.

Genus 1.—Ætorhinus, *Fieb.*

Elongate, narrow, somewhat delicate.

Head vertical in front; wider across the eyes than long, with a distinct transverse keel behind the latter; *Crown* convex, deflected; *Clypeus* convex; apex in a line with the base of the antennæ; antenniferous processes short, in a line with the lower half of the eye; *Face* long, pointed; central lobe long, convex, narrow; side lobes short, narrow. *Antennæ* longer than the body; 1st joint nearly as long as the head and pronotum together, perceptibly thickened on the inside beyond the base, and curved; 2nd more than twice as long as the 1st; 3rd almost as long as the 2nd; 4th one third the length of the 3rd. *Eyes* large, prominent; viewed from above somewhat hemispherical, from the side oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum somewhat campanulate, broader than long; anterior margin almost straight, angles slightly rounded; hinder angles raised; posterior margin concave, rounded towards and at the hinder angles. *Scutellum* triangular, almost equilateral; raised above the clavus, with a transverse channel near the base, behind which the disk is convex. *Elytra* longer than the abdomen; *Clavus* nearly flat as far as the nerve, then suddenly deflected to the corium; *Corium* horizontal, flattish; very slightly deflected at the junction with the cuneus and membrane; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, sides rounded, disk concave, with a

central channel; *Mesosternum* convex, with a deep central channel; posterior margin convex, indented in the middle; *Metasternum* raised into a callosity in the centre, angle shortened. *Legs* long and thin; hinder pair longest; *tarsi* short; 2nd and 3rd joints of the 3rd pair of almost equal length; 1st shortest.

Species 1.—ÆTORHINUS ANGULATUS.

PHYTOCORIS ANGULATUS, *Fall.* Hem. Suec. i, 80, 8 (1829); *Zett.* Ins. Lap. 272, 6 (1839).
CAPSUS — *H. Schf.* Wanz. iii, 75, fig. 292 (1836); *Meyer* Caps. 89, 72 (1843); *Sahlb.* Geoc. Fen. 97, 12 (1848); *Kirschb.* Caps. 43, 27 (1855).
POLYMERUS (BLEPHORIDOPTERUS) ANGULATUS, *Kolen.* Mel. Ent. ii, 108, 82 (1845).
CAPSUS (CAPSUS) ANGULATUS, *Flor*, Rhyn. Liv. i, 477, 6 (1860).
ÆTORHINUS ANGULATUS, *Fieb.* Europ. Hemp. 285 (1861).

Green or yellowish-green, sparingly clothed with fine, almost erect, yellowish-white hairs.

Head shining; antenniferous processes pale yellow. *Antennæ* yellowish; 1st joint at the base, and sometimes the apex, black, connected on the underside by a narrow streak of the same colour, with a few erect, somewhat spinose, brown hairs; extreme apex pale yellow; 2nd yellowish, extreme base pale yellow, followed by a black ring; apex brownish; 3rd and 4th brownish or piceous. *Rostrum* yellow; tip black.

Thorax.—Pronotum shining, with a transverse channel behind the anterior margin, not reaching to the sides, immediately followed by 2 callosities; disk convex, transversely wrinkled, slightly flattened in the centre, and deflected towards the callosities; hinder angles black. *Scutellum* greenish-yellow; base almost flat, and strongly deflected to the transverse channel. *Elytra* diaphanous; *Clavus;* inner margin pitchy black from the apex to the apical angle of the scutellum; nerve and suture dark green; disk from the inner margin to the nerve thickly covered with minute dark green spots; base narrowly yellowish; *Corium;* anterior margin and inner angle dark green; disk between the 1st nerve and the anterior margin, especially towards the apex, thickly covered with minute dark green spots;

Cuneus; anterior margin generally dark green; slightly rounded at the base, and leaving a distinct notch; *Membrane* pale brownish, iridescent; with a darker patch extending from below the apex of the cells to the anterior margin; inner marginal nerve brown; cell-nerves green; the outer one exteriorly margined with brown; in the large cell, about midway down, and near the outer nerve, a blackish spot, sometimes wanting. *Legs* green; *thighs* clothed with fine, short, yellowish hairs; on the underside with long, fine, erect, brownish ones; *tibiæ* with long, fine, somewhat spinose, brown hairs; knees of the 1st and 2nd pairs on the upper sides, and of the 3rd pair entirely, black; *tarsi* brownish; 3rd joint and *claws* blackish.

Abdomen underneath greenish-yellow; ♀ with 4 short, black streaks on the sides, sometimes wanting.

Length, $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

After death the insect changes much in colour; the head, thorax, scutellum, corium, except the anterior margin, more or less, and the legs, become yellow, leaving the hinder angles of the thorax and the knees black. A very abundant species, on alders, in August. It has occurred at Lewisham, and other places in the London district; also at Newport and Abergavenny, South Wales.

Genus 2.—SPHYRACEPHALUS.*

♂ elongate, narrow; ♀ oval, sometimes with undeveloped elytra.

Head vertical in front, in a line with the anterior margin of the eyes; much wider across the eyes than long, and without a transverse keel behind the latter; *Crown* almost flat; *Clypeus* convex; apex in a line with the base of the antennæ; antenniferous processes short, nearly in a line with the underside of the eyes. *Antennæ* as long as the body; 1st joint shorter than the pronotum, somewhat stout; 2nd stout, about 3 times as long as the 1st, thickened towards the apex; 3rd and 4th filiform; 3rd almost as long as the 2nd; 4th about one third the length of the 3rd. *Eyes* very large and prominent; viewed from above hemispherical, from the side oval; *Rostrum* reaching to the 3rd pair of coxæ; 1st joint reaching beyond the xyphus of the prosternum; 2nd, 3rd, and 4th, of almost equal thickness.

* Σφυρᾶ, a hammer, κεφᾰλή, a head.

Thorax.—Pronotum somewhat campanulate, broader than long; anterior margin straight, angles rounded; sides concave; hinder angles short, raised; posterior margin concave, rounded towards and at the hinder angles; disk convex. *Scutellum* slightly raised above the clavus, triangular, equilateral; with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* convex; *Corium* horizontal, flat as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* long, triangular; inner margin somewhat rounded next the apex. *Sternum: Prosternum;* xyphus triangular, somewhat pointed, with a faint fovea in the middle; *Mesosternum* convex; posterior margin with a notch in the middle; *Metasternum* convex. *Legs* long and thin; 3rd pair longest; *tarsi* long; 2nd joint longest, 2½ times as long as the 1st; 3rd shorter than the 2nd.

Species 1.—SPHYRACEPHALUS AMBULANS.

CAPSUS AMBULANS, *Fall.* Hem. Suec. i, 126, 20 (1829); *H. Schf.* Wanz. 109, figs. 335—337 (1836); *Meyer,* Caps. 86, 67 (1843); *Zett.* Ins. Lap. 279, 12 (1839); *Sahlb.* Geoc. Fen. 94, 5 (1848); *Kirschb.* Caps. 76, 88 (1855).

CHLAMYDATUS OCHRIPES, *Curt.* Br. Ent. xv, 693 (1838).

CAPSUS (CAPSUS) AMBULANS, *Flor,* Rhyn. Liv. i, 577, 13 (1860).

MECOMMA AMBULANS, *Fieb.* Europ. Hem. 284 (1861).

♂ black, shining, clothed with fine white hairs.

Head.—Crown with a yellow or reddish-yellow spot on the hinder part near each eye, often wanting in the ♂. *Antennæ* black, clothed with fine, short, white hairs; 3rd joint narrowly white at the base. *Rostrum* yellowish or brownish-yellow; tip black.

Thorax.—Pronotum with 2 callosities behind the anterior margin; hinder angles somewhat reflexed; disk somewhat thickly punctured in the centre behind the callosities. *Scutellum;* base deflected to the transverse channel; disk convex. *Elytra* diaphanous; *Clavus* convex, finely punctured; pitchy-brown from the inner margin to the nerve; between the latter and the suture pale brownish-yellow; *Corium;* anterior margin exteriorly and interiorly narrowly pitchy-brown, apex with a pitchy-black spot; margin of the inner angle brown; disk pale brownish-yellow;

Cuneus; anterior and inner margins brown; disk pale brownish-yellow, apex pitchy-black; *Membrane* gray, iridescent, with a pale triangular patch between the apex of the cuneus and the underside of the inner cell; inner marginal and cell-nerves brown, except the apex of the inner cell-nerve, which is pale; outer cell-nerve very narrowly margined with brown exteriorly, and with a small spot of the same colour in the cell about midway down and touching the outer nerve. *Legs* yellowish or brownish-yellow, clothed with short, fine, white hairs; *tibiæ* with a few long, erect, fine hairs; *tarsi* yellowish, 1st joint darker, 3rd blackish; *claws* brown.

Abdomen.—Upper and undersides black, the latter sparingly clothed with short, fine, white hairs.

Length, 2¼ lines.

♀ longish oval or somewhat pyriform. Black, clothed with fine white hairs. *Elytra* undeveloped.

Head larger than in the ♂. *Antennæ;* 2nd joint stouter; basal half of the 3rd yellow.

Thorax.—*Pronotum* short, trapeziform, behind the callosities finely wrinkled transversely; anterior margin convex, angles rounded; sides almost straight; hinder angles not raised; posterior margin as in the ♂. *Scutellum* in the centre next the transverse channel transversely wrinkled. *Elytra* short, without a claval suture; *Corium;* anterior margin somewhat thickened, rounded at the apex, base with a short longitudinal channel; disk convex, thickly and coarsely punctured; *Cuneus* and *Membrane* wanting.

Abdomen shining, very convex; *Connexivum* broad, nearly horizontal above; all other characters as in the ♂.

Length, 1¾ line.

Developed examples of the ♀ have not occurred in this country, so far as we know; and Flor, in the 'Rhyncoten Livlands,' i, 378, says that it is also unknown in Lapland, Sweden, and Finland; H. Sch., however, says, in 'Wanz.,' iii, p. 109, "the ♀ is long oval; elytra dark brown, with a paler, almost diaphanous, cuneus. Developed ♀'s are scarce."

We have never met with this insect abundantly, although it seems to be widely distributed, as it has occurred in South Wales, at Plumstead, and other places in the London district, by beating and sweeping, amongst grass, &c., in July.

Species 2.—SPHYRACEPHALUS ELEGANTULUS.

CAPSUS ELEGANTULUS, *Meyer*, Caps. 69, t. 5, fig. 2 (1843).
CYRTORHINUS ELEGANTULUS, *Fieb.* Europ. Hem. 284 (1861).

Black, shining.

Head.—*Crown* with a yellowish-white spot near each eye. *Antennæ* black. *Rostrum* yellowish or greenish-yellow; tip black.

Thorax.—*Pronotum* finely wrinkled transversely; disk somewhat flattish posteriorly. *Scutellum;* hinder portion finely wrinkled transversely. *Elytra* pale yellowish or greenish; *Clavus;* inner margin narrowly black, disk inner half brownish; *Corium;* inner apical angle with a large, somewhat triangular, brownish patch; *Cuneus;* inner margin and apex brownish; *Membrane* pale fuscous, iridescent; cell-nerves brown, apex of the inner one pale. *Sternum* black. *Legs* yellowish-white; *tarsi;* 3rd joint and *claws* black.

Abdomen underneath whitish-yellow, sparingly clothed with fine, short, white hairs.

Length, 1½ line.

This insect very closely resembles *S. ambulans*, but may be distinguished from it by its somewhat shorter appearance and the entirely black antennæ.

A few specimens have been taken by Dr. Power, at Wimbledon, in August, 1864. Near Newcastle-on-Tyne (*Bold*); Glanville's Wootton, Dorset (*Dale*).

Genus 3.—BYRSOPTERA, *Spin.*

♂ elongate, narrow, delicate; ♀ long oval, with undeveloped elytra.

♂ *Head* vertical in front, in a line with the anterior margin of the eye, wider across the eyes than long, and without a transverse keel behind the latter; *Crown* convex, deflected; *Clypeus* convex, long; apex in a line with the base of the antennæ; antenniferous processes short, in a line with the underside of the eye; *Face* long, pointed; central lobe short, broad, slightly convex; side lobes short, very narrow, and somewhat parallel. *Antennæ* as long as the body; 1st

joint about $\frac{6}{7}$rds the length of the pronotum; 2nd stout, about 3½rd times as long as the 1st; 3rd and 4th filiform, together a little longer than the 2nd; 4th more than ½ the length of the 3rd. *Eyes* large, somewhat prominent; viewed from above hemispherical, from the side oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint stout, reaching to the xyphus of the prosternum.

Thorax.—Pronotum somewhat campanulate, broader than long; anterior margin almost straight, angles somewhat acute; sides concave; hinder angles not raised; posterior margin concave, rounded towards and at the hinder angles. *Scutellum* triangular, equilateral, level with the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* slightly convex, deflected to the corium; *Corium* horizontal, slightly convex, very slightly deflected at the junction with the cuneus and membrane; *Cuneus* long, triangular. *Sternum; Prosternum* triangular; *Mesosternum* convex, in front reduced to a fine edge, posteriorly shortened, and with a channel in the centre; *Metasternum* broad, very short, angle shortened. *Legs* long and thin; 3rd pair longest; *tarsi* longish, slender; 2nd joint of the 3rd pair longer than the 3rd; 1st shortest.

Species 1.—Byrsoptera caricis.

Capsus caricis, *Fall.* Hem. Suec. i, 123, 15 (1829); *Meyer*, Caps. 66 (1843); *Sahlb.* Geoc. Fen. 92, 3 (1848); *Kirschb.* Caps. 70, 77 (♀); 75, 77, & 114, 77 (♂) (1855).
Cyllecoris caricis, *Hahn*, Wanz. ii, 100, fig. 184 (1833).
Halticus rufifrons, *Burm.* Handb. ii, 278, 3 (1835).
Capsus — *H. Schf.* Wanz. iii, 110, fig. 338 (1836); *Meyer*, Caps. 105 (1843).
Byrsoptera erythrocephala, *Spin.* Ess. 191 (1840).
Bryocoris rufifrons, *Sahlb.* Geoc. Fen. 124, 1 (1848).
Capsus (Capsus) rufifrons, *Flor*, Rhyn. Liv. i, 622, 97 (1860).
Malthacus caricis, *Fieb.* Europ. Hem. 312 (1861).

♂ Black, clothed with fine, short, yellowish hairs.

Head shining. *Antennæ* clothed with fine, short, yellowish-white hairs; 1st joint brownish-yellow, frequently black; 2nd black; 3rd and 4th pale yellowish. *Eyes* red, or brownish-red. *Rostrum;* 1st joint generally black; 2nd and 3rd pale; tip black.

Thorax.—Pronotum shining, with a transverse channel in the middle indented in the centre; hinder angles not reflexed; disk convex, finely punctured, widened at the hinder angles. *Scutellum* deflected from the base to the transverse channel; disk convex. *Elytra* diaphanous; *Clavus* pale pitchy, finely wrinkled transversely, suture pale; *Corium;* anterior margin piceous next the base, extreme base very narrowly red; disk finely wrinkled transversely, pale pitchy, sometimes with a reddish shade; *Cuneus* brownish-yellow; base broadly pale; *Membrane* blackish, with a long, pale, triangular patch extending from below the underside of the inner cell to the anterior margin, and a dark patch extending from below the underside of the outer cell to the apex; inner marginal nerve piceous; cell-nerves brown; apex frequently pale or reddish-white. *Legs* yellow, clothed with very short, fine, pale-yellow hairs; *tibiæ* with a few long, erect, fine hairs; *tarsi* and *claws* yellow; 3rd joint of the former sometimes a little darker.

Length, 1¾—2 lines.

♀ *Abdomen* oval. Black, shining, sparingly clothed with very short, depressed, yellowish hairs. *Pronotum* much narrower than the abdomen; callosities large. *Elytra* without *clavus, cuneus,* or *membrane.*

Head red; *Face;* central lobe frequently black. *Antennæ;* 1st joint brown or blackish; 2nd and 3rd yellow; base of the 2nd narrowly, apex broadly, brown or blackish; 4th brownish. *Eyes* brown. *Rostrum* yellow; 1st joint brown or blackish; tip narrowly black.

Thorax.—Pronotum much narrower than the abdomen; callosities large; sides rounded to the anterior margin; disk depressed at the hinder angles, which are somewhat reflexed; posterior margin concave. *Elytra* undeveloped; very convex; shorter than the abdomen, rounded at the apex; without *clavus, cuneus,* or *membrane. Sternum* black. *Legs; coxæ* and *fulcra* whitish-yellow; *thighs* yellow, sometimes brownish at the base; *tibiæ* yellow, with fine, short, somewhat spinose, yellowish hairs; *tarsi* yellow; 3rd joint somewhat brownish.

Abdomen black underneath, clothed with very short, whitish-yellow hairs.

Length, 1½ line.

The ♀ appears to be more abundant than the ♂; both sexes have

been taken by sweeping a hedge-bank, between Leatherhead and Mickleham; also near Blackheath, and at Tunbridge Wells, in July.

Genus 4.—Phylus (*Hahn*), *Fieb.*

Elongate, narrow, almost parallel.

Head; viewed from above, pointed; very much deflected from behind the eyes to the apex, and slightly convex; *Crown* almost flat; *Clypeus* apex in a line with the base of the antennæ; antenniferous processes very short, in a line with the underside of the eyes; *Face* in front short, central lobe longish, convex; side lobes short, narrow. *Antennæ* about as long as the body; 1st joint a little shorter than the head; 2nd 4 times as long as the 1st, slightly thickened to the apex; 3rd and 4th together about as long as the 2nd, somewhat filiform; 4th ½ as long as the 3rd. *Eyes* large, somewhat prominent, viewed from above almost hemispherical, from the side subglobose. *Rostrum* reaching beyond the 3rd of coxæ; 1st joint reaching to the hinder margin of the eye.

Thorax.—Pronotum trapeziform, twice as broad across the posterior margin as long; anterior margin slightly indented in the middle, behind which are 2 almost obsolete callosities, angles rounded; sides nearly straight; hinder angles rounded, not reflexed; posterior margin slightly concave, rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* large, triangular, almost equilateral; very slightly raised above the clavus, with a deep transverse channel about ⅓rd the distance from the base; anterior and hinder portions convex. *Elytra* considerably longer than the abdomen; *Clavus* flattish, deflected to the corium; *Corium* horizontal, flattish between the claval suture and the 1st nerve, convex from the latter to the anterior margin; cuneus and membrane deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, convex; *Mesosternum* convex, with a central channel posteriorly; posterior margin concave; *Metasternum* raised into a callosity in the middle, posterior margin angled. *Legs* long and slender; *tarsi* longish; 2nd and 3rd joints of almost equal length; 1st joint shortest.

Species 1.—PHYLUS PALLICEPS.

PHYLUS PALLICEPS, *Fieb.* Europ. Hem. 315, 2 (1861).

Reddish or ochreous-yellow, clothed with fine, yellowish-white hairs; *Membrane* entirely pale.

Head reddish or ochreous-yellow. *Antennæ* pale yellow; 1st joint at the base sometimes narrowly brown. *Eyes* brown. *Rostrum* pale yellow; tip brown.

Thorax.—Elytra; Membrane entirely pale, iridescent; cell-nerves pale yellowish or reddish-yellow. *Legs* pale yellow; *tibiæ* with short, somewhat spinose, pale hairs; *tarsi* pale yellow; apex of the 3rd joint and *claws* brown.

Abdomen above brown, *connexivum* yellowish; underneath yellowish, clothed with fine, yellowish hairs; the middle frequently more or less brown.

Length, $2\frac{3}{4}$ lines.

This insect is closely allied to *P. melanocephalus*, but may at once be distinguished from it by its pale head and abdomen.

Sparingly at Darenth Wood, on nut-bushes, in June.

Species 2.—PHYLUS MELANOCEPHALUS.

CIMEX MELANOCEPHALUS, *Lin.* F. S. 974 (1761); S. N. 728, 88 (1767).
MIRIS PALLENS, *Fab.* S. R. 254, 8 (1803).
PHYTOCORIS REVESTITUS, *Fall.* Hem. Suec. i, 89, 26 (1829).
LYGUS MELANOCEPHALUS, *Hahn*, Wanz. i, 155, fig. 79 (1831).
PHYTOCORIS — *Burm.* Handb. ii, 268, 7 (1835).
CAPSUS — *Meyer*, Caps. 55, 17 (1843); *Sahlb.*, Geoc. Fen. 99, 17 (1848); *Kirschb.* Caps. 74, 84 (1855).
CAPSUS (CAPSUS) MELANOCEPHALUS, *Flor*, Rhyn. Liv. i, 621, 96 (1860).
PHYLUS MELANOCEPHALUS, *Fieb.* Europ. Hem. 314, 3 (1861).

Bright red, orange-red, orange-yellow, or pale ochreous-yellow, clothed with fine, yellow hairs. *Membrane*, with the entire margin, except a clear patch between the cells and the apex of the cuneus, broadly black, narrowed towards and along the inner margin; inner cell black.

Head black. *Antennæ* pale yellow; 1st joint black at the base. *Eyes* black. *Rostrum;* 1st joint and apex blackish.

Thorax.—Pronotum; sides narrowly black, sometimes with an oval brownish spot between the anterior margin of the callosities and the basal angles of the scutellum. *Elytra* somewhat diaphanous; inner margin and nerve of the clavus, and the anterior and posterior margins of the corium darker than the disk; *Membrane* pale, iridescent; the entire margin, except a pale patch between the cells and the apex of the cuneus, broadly black, narrowed towards and along the inner margin; inner marginal nerve black; cell-nerves yellow or reddish-yellow; inner cell black; outer cell more or less clouded with black towards the apex. *Legs* yellow; *thighs* sometimes reddish-orange towards the apex; *tibiæ* with short, somewhat spinose, yellowish hairs; *tarsi;* apex of the 3rd joint and *claws* pale brown.

Abdomen black, or brown-black.

Length, $2\frac{2}{3}$ lines.

Not an uncommon species at Darenth, &c., on nut-bushes, in June.

Species 3.—Phylus Coryli.

Cimex Coryli, *Lin.* F. S. 974 (1761); S. N. 733, 121 (1767).
Lygæus — *Fab.* E. S. iv. 171, 126 (1794); S. R. 234, 150 (1803).
Phytocoris Coryli, *Fall.* Hem. Suec. i, 90, 27 (1829); *Burm.* Handb. ii, 268, 8 (1835).
Phylus pallipes, *Hahn,* Wanz. i, 26, fig. 16 (1831).
Capsus Coryli, *Meyer,* Caps. 54, 15 (1843); *Sahlb.* Geoc. Fen. 99, 16 (1848); *Kirschb.* Caps. 74, 85 (1855).
— (Capsus) Coryli, *Flor,* Rhyn. Liv. i, 620, 96 (1860).
Phylus Coryli, *Fieb.* Europ. Hem. 314, 4, (1861).

Black, brownish-black, or grayish, shining, clothed with fine, yellowish hairs. *Pronotum* with a small puncture within the anterior angles. *Membrane* entirely black, excepting a white, triangular patch between the apex of the cuneus and the cells; cells black.

Head.—Antennæ yellow; base of the 1st joint black. *Eyes* brownish-black. *Rostrum* yellow; 1st joint black or brown; tip brown.

Thorax.—*Pronotum* transversely wrinkled. *Elytra; Cuneus* black; *Membrane* black, iridescent, with a white triangular patch between the apex of the cuneus and the cells; cell-nerves and cells black, apex of the former white. *Legs* pale yellowish-white; *tibiæ* with short, somewhat spinose, yellow hairs; *tarsi;* 3rd joint at the apex brown; *claws* paler.

Abdomen underneath, black or brown.

In brownish-black or grayish examples the following differences exist:

Head.—*Crown* brown.

Pronotum pale gray, palest towards the anterior margin; anterior margin narrowly black, and a piceous spot at the anterior angles. *Scutellum* as far as the transverse channel, more or less ochreous or reddish-yellow; basal angles generally brown; hinder portion brown, frequently with a pale central line. *Elytra; Corium* at the base sometimes reddish-brown; anterior margin black, the colour spreading as it reaches the apex into a clavate patch; apex narrowly white; between the posterior inner angle and the cuneus a narrow whitish streak; *Cuneus* reddish or brownish-yellow; apex and anterior margin broadly black; *Membrane* with a large, black, triangular patch, extending from below the white patch to the apex; inner marginal nerve black.

Length, 2¼ lines.

Brownish-black or grayish examples are most frequently met with. Black ones occur but sparingly.

A common species at Darenth, upon nut-bushes, in June and July.

Species 4.—Phylus Avellanæ.

Capsus Avellanæ, *H. Schf.* Wanz. vi, fig. 670 (1842); *Meyer*, Caps. ii, fig. 2 (1843); *Kirschb.* Caps. 75, 86 (1855).

Phylus — *Fieb.* Europ. Hem. 314, 5 (1861).

Grayish-red, brownish, or brownish-red, clothed with yellow hairs.

Membrane pale pitchy brown, the inner cell, and a streak below the cuneus, paler.

Head.—*Antennæ* yellow; base of the 1st joint generally blackish. *Rostrum* yellow; 1st joint sometimes brown; tip brown.

Thorax.—*Pronotum;* anterior margin narrowly, and angles more or less broadly, piceous. *Scutellum;* transverse channel concave in the middle; basal angles frequently brown; hinder portion finely wrinkled transversely, occasionally brown, the centre more or less pale. *Elytra: Clavus;* base narrowly red; *Corium;* base narrowly red; anterior margin in brownish-red examples blackish, the colour spreading as it reaches the apex; space between the 1st nerve and the anterior margin piceous; *Cuneus* reddish or orange-red, sometimes the apex and the anterior margin narrowly brown; *Membrane* pale pitchy-brown, iridescent, with a pale streak extending from below the apex of the cuneus to the base of the inner cell; anterior margin frequently narrowly brown; cell-nerves gray or grayish-white; inner cell-nerve and apex of both the cell-nerves red. *Legs* yellow; *tibiæ* with short, fine, somewhat spinose, pale brownish yellow hairs; *tarsi;* apex of the 3rd joint pale brown; *claws* reddish-yellow.

Abdomen underneath, dark brown or reddish-brown.

Length, 2½ lines.

We have met with this insect abundantly, on nut-bushes, at Croydon, Mickleham, and Darenth, in July.

Family 8.—CAMARONOTIDÆ.

Genus 1.—Camaronotus, *Fieb.*

Elongate; *Corium* widened from behind the middle towards the cuneus.

Head long, triangular, very considerably deflected; wider across the eyes than long, with a distinct transverse keel almost in a line with the hinder margin of the latter; *Clypeus* slightly convex, apex in a line with the base of the antennæ; antenniferous processes short, in a line with the underside of the eyes; *Face* pointed; central lobe longish, broad, slightly convex; side lobes very short and narrow. *Antennæ* shorter than the body; 1st joint short, somewhat stout, about ½ as long as the head; 2nd stout, thickened to the apex, 4½ times as long as the 1st; 3rd and 4th somewhat filiform; 3rd longer than the 4th, sometimes a little stouter. *Eyes* large, pro-

minent; viewed from above hemispherical, from the side narrow, long-oval; the hinder margin slightly projecting beyond the transverse keel; *Rostrum* reaching beyond the 3rd pair of coxæ; 1st joint stout.

Thorax.—Pronotum longish trapeziform, very much narrower in front than the head across the eyes, posteriorly; broader than long without callosities behind the anterior margin, angles rounded; sides concave; hinder angles raised; posterior margin concave, rounded towards and at the hinder angles, or convex, indented in the middle; disk convex. *Scutellum* large, triangular, with a transverse channel next the base; centre of the disk with a large callosity, raised above the clavus. *Elytra* longer than the abdomen, widening from behind the middle; *Clavus* convex, deflected to the corium; *Corium* convex, somewhat embracing the abdomen, elevated from beyond the middle towards the cuneus and membrane, which are very much deflected; *Cuneus* short, base as broad or almost as broad as the length. *Sternum: Prosternum;* xyphus short, triangular; *Mesosternum* convex, somewhat contracted, and deflected posteriorly; posterior margin notched; *Metasternum* raised into a callosity in the middle, widened posteriorly. *Legs* long, somewhat stout, hinder pair longest; 3rd pair of *tibiæ* thickened in the middle, somewhat bent and flattened on the sides; *tarsi* short, slender; 3rd joint as long as or longer than the 2nd; 1st shortest.

Species 1.—Camaronotus cinnamopterus.

Capsus cinnamopterus, *Kirschb.* Caps. 72, 81, and 135, 10 (1855).
— (Capsus) cinnamopterus, *Flor*, Rhyn. Liv. i, 572, 60 (1860).
Camaronotus — *Fieb.* Europ. Hem. 313, 1 (1861).

Cinnamon-brown, very sparingly clothed with short, yellowish hairs.

Head.—Crown more or less piceous in the centre. *Antennæ;* 1st joint brownish-yellow; 2nd black, base narrowly brownish-yellow, very slightly thinner than the 1st; 3rd black, base narrowly red; 4th yellowish-white, apex brown. *Eyes* brown-black. *Rostrum* brown.

Thorax.—Pronotum black; sides almost straight to within a little of the hinder angles, then suddenly widened; posterior margin convex, indented in the middle; disk convex, transversely wrinkled, deflected to the scutellum and base of the corium from a little within

the posterior margin. *Scutellum* black, callosity transversely wrinkled; sides flattened, with a narrow line of short, silver-white hairs. *Elytra* very finely wrinkled transversely; *Clavus;* inner margin and apex piceous, within the latter narrowly brown; *Corium;* anterior margin with the apex somewhat reddish; disk with 2 very narrow bands of silver-white hairs, the 1st about ⅓rd from the base, extending from the anterior margin to the claval suture; 2nd about ⅓rd from the apex, extending from the anterior margin to the inner margin of the clavus, the space between the latter and the apex brown, convex, shining; *Cuneus* brown, convex, longer than broad, with a very small, snow-white spot at the basal inner angle; *Membrane* broad, pitchy black, iridescent, with a narrow white streak extending through the inner cell to the apex of the cuneus; disk with a large, pale, lunate, indefinite patch between the base of the inner margin and the outer cell-nerve; inner marginal and cell-nerves brown; outer cell-nerve curved. *Legs* brown; base of all the *thighs* reddish-yellow; *tibiæ* with very short, somewhat spinose, brown hairs; apex of all the pairs narrowly piceous; *tarsi* brownish-yellow, 3rd joint and *claws* piceous.

Abdomen underneath, brown-black, shining, clothed with very short white hairs.

Length, 2 lines.

After death the insect gradually becomes nude, and the position of the bands can only be recognised by the paler streaks on the corium. It is very closely allied to *C. clavatus,* but may be distinguished from it by the wider pronotum, the differences in the antennæ, the length of the cuneus, and the small white spot at the inner angle of the latter. One example beaten from *Pinus sylvestris* at Plumstead, in July, and two others off oaks at Lewisham. In the net it might easily be mistaken for a small specimen of the large wood ant, *Formica rufa.*

Species 2.—Camaronotus clavatus.

Cimex clavatus, *Lin.* S. N. 729, 97 (1767).
Capsus bifasciatus, *Fab.* S. R. 242, 7 (1803); *Fall.* Hem. Suec. i, 118, 6 (1829).
Pilophorus bifasciatus, *Hahn,* Icon. i, t. 23 (1826).
Phytocoris clavatus, *Burm.* Handb. ii, 266, 1 (1835).

CAPSUS CLAVATUS, *H. Schf.* Wanz. iii, 47, 267 (1836); *Zett.* Ins. Lap. 278, 3 (1839); *Meyer*, Caps. 87, 70 (1843); *Sahlb.* Geoc. Fen. 91, 1 (1848); *Kirschb.* Caps. 72, 80, & 137 (1855).
PHYTOCORIS SPHEGIFORMIS, *Kolen.* Mel. Ent. ii, 110, 85 (1845).
CAPSUS (CAPSUS) CLAVATUS, *Flor*, Rhyn. Liv. i, 569, 59 (1860).
CAMARONOTUS — *Fieb.* Europ. Hem. 313, 2 (1861).

Brown-yellow; very sparingly clothed with short, yellowish hairs.

Head more or less brown in the centre, with a short, indistinct, longitudinal keel, scarcely extending to the front of the eyes. *Antennæ;* 1st and 2nd joints brownish-yellow, apex of the latter broadly black, base a little thinner than the 1st; 3rd brown, basal half yellowish-white; 4th brown, basal ¼th yellowish-white. *Eyes* brownish-black; *Rostrum* brown, last 2 joints darker.

Thorax.—Pronotum brown, sides concave beyond the middle; posterior margin slightly concave, rounded towards and at the hinder angles; disk very convex, transversely wrinkled. *Scutellum* black, with a large lunate depression between the base and the transverse channel; callosity hemispherical, finely wrinkled transversely; margins flat, with a narrow line of short, silver-white hairs. *Elytra: Corium;* between the 1st nerve and the anterior margin shining, brown, apical ⅓rd convex, outer angles narrowly reddish; disk with 2 very narrow bands of silver-white hairs; the 1st about ⅓rd from the base, extending from the anterior margin to the claval suture; 2nd about ⅓rd from the apex, extending from the anterior margin to the inner margin of the clavus; *Cuneus* convex, reddish-brown, base about equal to the length; *Membrane* broad, blackish-brown; the entire margin, with the exception of the base, broadly pale; cell-nerves pale reddish-brown. *Legs* red; *thighs* with a broad piceous patch on the upperside next the apex, the latter yellowish underneath; *tibiæ* with a few, very short, somewhat spinose, dark hairs; *tarsi* yellowish; 1st joint a little darker; 3rd brown; *claws* reddish-yellow.

Abdomen underneath brown, shining, clothed with short, yellowish hairs; the sides with a few patches of silver-white ones.

Length, 2 lines.

We have only seen a single example of this insect, taken by Mr. Rye. Flor says, "upon willows, alders, and birches, not uncommon in June, July, and August."

Family 9.—GLOBICEPIDÆ.

Genus 1.—Globiceps (*Lat.*), *Fieb.*

♂ elongate, narrow, parallel; ♀ suboval, frequently with undeveloped elytra.

Head vertical in front, wider across the eyes than long, with a distinct transverse keel behind the latter; *Crown* flattish convex; in the undeveloped ♀ very convex and considerably raised above the upper margin of the eyes; *Clypeus* convex, apex in a line with the base of the antennæ; antenniferous processes short, placed a little above the underside of the eyes; *Face;* central lobe long, stout, convex; side lobes short, stout, rounded outwardly. *Antennæ* shorter than the body; 1st joint stout, somewhat cylindrical, about ⅗rds the length of the pronotum; 2nd stout, thickened towards the apex; in the ♀ much more so, about 3 times as long as the 1st; 3rd and 4th somewhat filiform, 3rd about half as long as the 2nd, 4th, ⅓rd the length of the 3rd. *Eyes* large, prominent, viewed from above hemispherical, from the side, oval. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum longish trapeziform, broader than long, constricted in front, with 2 large callosities behind the straight anterior margin; sides rounded in front, widening considerably as they approach the raised hinder angles; posterior margin almost straight, or concave, rounded towards and at the hinder angles. *Scutellum* triangular, almost equilateral, raised above the clavus, with a transverse channel near the base, beyond which the disk is generally convex. *Elytra* generally longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, somewhat convex, very slightly deflected at the junction with the cuneus and membrane; *Cuneus* long, triangular, in developed examples. *Sternum: Prosternum;* xyphus longish, triangular, slightly channeled in the middle; margins somewhat keeled; *Mesosternum* convex; channeled in the centre; posterior margin convex, deeply indented in the middle; *Metasternum;* sides somewhat straight; middle

convex, margined; apex depressed. *Legs* long and thin, hinder pair longest; *tarsi* short; 2nd joint of the 3rd pair longer than the 3rd; 1st shortest.

Species 1.—GLOBICEPS SELECTUS.

GLOBICEPS SELECTUS, *Fieb.* Europ. Hém. 284, 6 (1861).

Black, sparingly clothed with very short, silver-white hairs; *Cuneus*, apex black; ♀ long oval, with undeveloped elytra.

♂ *Head* shining; *Crown* level with the upper margin of the eyes. *Antennæ;* 1st joint brownish-yellow or brownish-red, base black, apex frequently piceous; 2nd black; 3rd and 4th piceous or brownish. *Eyes* black. *Rostrum* brownish or reddish-yellow; 1st joint and tip black.

Thorax.—Pronotum; callosities very prominent; space between the latter flattish; sides, to behind the latter, convex, from thence straight; hinder angles not raised nor reflexed; posterior margin almost straight in the middle, rounded towards and at the hinder angles; disk convex, transversely wrinkled, deflected to the callosities. *Scutellum*, from the base to the transverse channel, convex, smooth; disk convex, transversely wrinkled. *Elytra: Corium;* anterior margin pale brownish-yellow, base for a short distance black, apex more or less brown; disk with a large, pale-yellowish white, triangular patch, palest next the claval suture, base narrowly black, apex with a broad pitchy-brown band, somewhat irregular, and shaded off into brownish-yellow on the inner margin; *Cuneus* broadly pale yellowish-white at the base; *Membrane* blackish, iridescent; the inner cell, apical nerve of the latter and a narrow patch below the inner margin of the cuneus to the anterior margin, white, immediately below which is a large, triangular dark patch; anterior margin rounded below the cuneus, leaving a distinct notch; inner marginal and cell-nerves pitchy brown, outer one, towards the apex, exteriorly margined with piceous, apex exteriorly white. *Legs* reddish, or pitchy brown; *thighs* narrowly paler at the apex; *tibiæ* sometimes pale brownish-yellow, with a few short, fine, erect, pale hairs; apex of all the pairs narrowly piceous; *tarsi* brown; 3rd joint and *claws* black; 1st frequently piceous.

Length, $2\frac{3}{4}$—3 lines.

♀ *Head* shining; *Crown* convex, raised above the upper margin of the eyes. *Antennæ*: 1st joint reddish or brownish, base narrowly black; 3rd and 4th reddish or brownish-red. *Rostrum* as in the ♂.

Thoraæ.—Pronotum with 2 very convex callosities behind the constricted portion of the anterior margin; sides to behind the callosities convex, from thence slightly concave. *Elytra* not covering the abdomen; disk of the *Corium* with a broad pitchy-brown band at the apex, darkest between the 1st nerve and the inner angle; *Cuneus* short, pale yellowish-white, rounded at the apex, on which is a small piceous spot; *Membrane* very short, pitchy black, with one cell; inner marginal and cell-nerve blackish, apex of the latter white; all the other characters as in the ♂.

Length, $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

A very abundant species at Eltham, Weybridge, Sanderstead, and other places in the London district. The ♀ is frequently to be met with by sweeping and beating *Umbelliferæ*, but we took both sexes most commonly by searching amongst grass at the roots of broom and other bushes, in July.

Species 2.—GLOBICEPS FLAVOMACULATUS.

CIMEX FULVIPES, *Scop.* Ent. Carn. 134, 388 (1763).
CAPSUS FLAVOMACULATUS, *Panz.* F. G. 92, 16 (1794); *Fab.* S. R. 247, 30 (1803); *Fall.* Hem. Suec. i, 120, 9 (1829); *Zett.* Ins. Lap. 278, 5 (1839); *Meyer*, Caps. 91, 76 (1843); *Sahlb.* Geoc. Fen. 96, 10 (1848); *Kirschb.* Caps. 46, 31 (1855).
PHYTOCORIS —. *Burm.* Handb. ii, 267, 3 (1835).
POLYMERUS (KELIDOCORIS) FLAVOMACULATUS, *Kolen.* Mel. Ent. ii, 103, 75 (1845).
CAPSUS (CAPSUS) FLAVOMACULATUS, *Flor*; Rhyn. Liv. i, 469, 2 (1860)
GLOBICEPS FLAVOMACULATUS, *Flor*, Europ. Hem. 284, 6 (1861).

Black, sparingly clothed with very short silver-white hairs on the *pronotum*, and pale yellow ones on the *elytra*; *Cuneus*, apex black. ♀ long oval, with undeveloped elytra.

♂ *Head* shining; *Crown* a little below the upper margin of the eyes. *Antennæ*: 1st joint brownish-yellow, base and apex narrowly

black; 2nd black; 3rd and 4th brownish-yellow. *Eyes* black. *Rostrum* brownish-yellow; 1st joint generally pitchy black; tip black.

Thorax.—Pronotum; callosities somewhat prominent, anterior margin between the latter with a somewhat indistinct, transverse keel; sides slightly concave; hinder angles not raised nor reflexed; posterior margin straight, very slightly rounded towards and at the hinder angles; disk convex, flattened in the middle towards and at the transverse channel, and finely wrinkled transversely. *Elytra: Corium;* anterior margin narrowly pale brownish-yellow, apex more or less brownish; base for a short distance black; disk with a large, pale-yellowish white, triangular patch; base narrowly black, apex with a broad, irregular, piceous band (broadest next the claval suture), gradually becoming paler as it approaches the inner margin, which latter is shaded off into the pale triangular patch; *Cuneus* broadly pale yellowish-white at the base; *Membrane* blackish, iridescent; between the apex of the cuneus and the inner cell-nerve a white, triangular patch; inner marginal and cell-nerves pitchy brown, apex of the latter and the inner cell white. *Legs* pale-reddish or pitchy brown; *thighs* of the 3rd pair narrowly paler at the apex; *tibiæ* pale brownish-yellow, with a few short, fine, erect, pale hairs; 1st and 2nd pairs palest; *tarsi* brown, 3rd joint and *claws* black.

Length, $2\frac{1}{4}$—$2\frac{1}{2}$ lines.

Fieber, in the 'Europ. Hem.,' 284-5, says of the ♀: "Callosities more prominent, the elytra undeveloped, and without a membrane, the corium rounded at the apex, the band outwardly rust-reddish, and with the black clavus almost forming a cross."

The foregoing description of the ♂ is made from a single example taken on Dartford Brent, by sweeping amongst grass, flowers, &c., on 2nd August, 1863. It was forwarded to Dr. Fieber for determination, and was returned by him as this insect. The ♀ we have not met with, but we have given above the characters laid down by him.

It is very closely allied to *G. selectus*, and can only be separated from that species by its smaller size and the less prominent callosities on the pronotum. Are they distinct?

Species 3.—Globiceps flavonotatus.

Lygæus flavomaculatus, *Wolff*, Ic. Cim. 114, tab. 11, fig. 108, *a*, *b*, (1802).
Cyllocoris flavonotatus, *H. Schf.* Wanz. iii. 10, fig. 235 (1836).
Cyllecoris flavonotatus, *Bohem.* Vet. Akad. Förh. 71, 27 (1852).
Capsus — *Kirschb.* Caps. 47, 32, & 109 (1855).
— (Capsus) — *Flor*, Rhyn. Liv. i, 467, 1 (1860).
Globiceps — *Fieb.* Europ. Hem. 283, 4, (1861).

Black, sparingly clothed with fine, long, erect, whitish hairs; apex of the *Cuneus* narrowly pale; ♀ with developed elytra.

Head.—Transverse keel, yellow. *Antennæ;* 1st joint reddish-brown, base narrowly black, frequently with a brown streak on the upper side throughout its entire length; 2nd black, sometimes the apical half brown; 3rd and 4th brown. *Eyes* brown or black. *Rostrum* brownish or reddish-yellow, 1st joint blackish; tip black.

Thorax.—*Pronotum;* the space between the callosities in front, very convex, somewhat triangular; sides to behind the callosities rounded, from thence slightly concave; hinder angles short, reflexed; posterior margin concave, rounded towards and at the hinder angles; disk convex, coarsely wrinkled transversely, deflected to the callosities. *Scutellum* from the base to the transverse channel, convex, smooth; disk convex, flattened in the centre and coarsely wrinkled transversely. *Elytra: Corium;* anterior margin yellow throughout its entire length, except a short black streak at the base; disk with a large, triangular, yellow patch occupying the entire space between the claval suture and the anterior margin, except a narrow black streak within the latter; *Cuneus* broadly yellow at the base; apex narrowly yellow; *Membrane* black, iridescent, with a narrow whitish streak extending from below the inner cell, and the inner margin of the cuneus, to the anterior margin; the latter rounded below the apex of the cuneus, leaving a distinct notch; inner marginal and cell-nerves black, apex of the latter white. *Legs* reddish-yellow; *thighs* with a broad blackish, or brown patch in the middle of the upperside, sometimes wanting in the 1st and 2nd pairs; *tibiæ* with short, fine, erect, white hairs; *tarsi* brown; 3rd joint and *claws* darker.

Length, 2¾—3 lines.

A very common species at Lewisham and other places in the London district. It occurs in woods, in May and June, on oak trees, &c.

Family 10.—IDOLOCORIDÆ.

Genus 1.—Cyllocoris, *Hahn.*

Elongate, parallel, narrow.

Head short, vertical in front, 2½ times wider across the eyes than long, distinctly narrowed behind the latter, and without a transverse keel; *Crown* somewhat convex; *Clypeus* convex, apex in a line with the base of the antennæ; antenniferous processes very short, in a line with the middle of the lower half of the eyes; *Face* obtuse, central lobe longish, convex; side lobes short, broad, rounded outwardly. *Antennæ* almost as long as the body; 1st joint cylindrical, as long as the pronotum; 2nd 2½ times as long as the 1st, slightly thickened towards the apex; 3rd and 4th somewhat filiform, together about ⅔rds the length of the 2nd; 4th ⅓rd of the 3rd. *Eyes* large, prominent, viewed from above hemispherical, from the side oval. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint stout.

Thorax.—Pronotum longish campanulate; broader across the posterior margin than long, with a very narrow collar, and 2 callosities behind the slightly indented anterior margin; sides almost straight for about ⅓rd their length, then sinuate to the reflexed hinder angles; posterior margin concave, rounded towards and at the hinder angles; disk with a deep channel immediately behind the callosities, the hinder portion very convex and much deflected to the transverse channel. *Scutellum* large, triangular, equilateral, considerably raised above the clavus, with a deep transverse channel nearly in the centre, anterior portion very convex, the convexity forming, with that of the pronotum, a continuous curve; hinder portion convex. *Elytra* longer than the abdomen; *Clavus* flat to the nerve, from the latter to the suture suddenly deflected; *Corium* flat between the claval suture and the 1st nerve, between the latter and the anterior margin, convex; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, sides margined; *Mesosternum* convex; posterior margin con-

vex, slightly notched in the middle; *Metasternum* convex; centre prominent, almost hemispherical; posterior margin elevated, centre obtusely angled. *Legs* long, thin; 3rd pair longest; *thighs* of the 1st and 2nd pairs almost cylindrical; 3rd pair slightly flattened on the sides; *tarsi* short, 3rd joint of the 3rd pair longer than the 2nd; 1st joint shortest.

Species 1.—Cyllocoris histrionicus.

Cimex histrionicus, *Lin.* S. N. 728, 89 (1767); *Schrank*, Enum. Ins. Aust. 286, 550 (1781).
Lygæus agilis, *Fab.* E. S. iv, 182 170 (1794); *Wolff.* Ic. Cim. 150, tab. 15, fig. 147, *a*, *b* (1804).
Capsus — *Fab.* S. R. 247, 31 (1803); *Fall.* Hem. Succ. i, 120, 10 (1829).
Cyllocoris agilis, *Hahn.* Wanz. ii, 98, fig. 182 (1833).
Phytocoris histrionicus, *Burm.* Handb. ii, 267, 2 (1835).
Capsus — *Meyer*, Caps. 90, 75 (1843); *Sahlb.* Geoc. Fen. 96, 9 (1848); *Kirschb.* Caps. 43, 26 (1855).
Polymerus (Kelidocoris) histrionicus, *Kolen.* Mel. Ent. ii, 102, 74 (1845).
Capsus (Capsus) histrionicus, *Flor*, Rhyn. Liv. i, 475, 5 (1860).
Cyllocoris — *Fieb.* Europ. Hem. 282 (1861).

Black, shining.

Head.—Crown in the centre behind the eyes, with a small yellowish or yellowish-white spot. *Antennæ;* 1st joint yellowish-red, red or brown, base narrowly black, immediately followed by a narrow yellow band, or entirely yellow except the black base, and the apex more or less red; 2nd black, clothed with very short dark hairs; 3rd and 4th brown, apex of the latter more or less reddish-brown. *Rostrum* yellow, tip black or brown.

Thorax.—Pronotum; the collar, a central line reaching from between the callosities to the posterior margin, and a transverse broad band within the latter yellow, or yellowish-white. *Scutellum* from the transverse channel to the apex orange-yellow or yellow. *Elytra; Clavus* yellow, somewhat coarsely shagreened, base frequently black, transversely wrinkled; inner margin and nerve as far as the apical angle black; *Corium;* anterior margin black at the base, with a short yellow streak immediately beyond extending for a little way

upon the disk; remaining portion pitchy black, apex piceous; disk pale piceous, palest in the centre; *Cuneus* broadly yellow at the base, apex and inner margin narrowly yellow; *Membrane* blackish, iridescent; a narrow white streak extends from under the apex of the cells and below the inner margin of the cuneus to the anterior margin, and below the latter a large, triangular dark patch extends to the apex; inner marginal nerve black at the base; cell-nerves pitchy black, apex white. *Legs* yellow; 3rd pair sometimes reddish-yellow; *thighs* at the base yellowish-white, on the upperside with a brownish streak; *tibiæ;* 3rd pair sometimes piceous at the apex; *tarsi* brown.

Abdomen underneath brown or black.

Length, 3½ lines.

The following variety of the ♀ is frequently met with:—*Pronotum* yellow, callosities black. *Elytra* orange-yellow, somewhat diaphanous; *Clavus;* between the nerve and the suture white; *Corium;* anterior margin and a broad streak next the claval suture, white; *Cuneus* pale yellowish-white, margins orange-yellow; *Membrane* pale; cell-nerves yellowish-white.

Abdomen underneath brown, sides and apex more or less yellow.

All the other characters as in the foregoing description.

This is a very common species on birch trees, in June and July. We have taken it at Darenth Wood and other places in the London district.

Genus 2.—SYSTELLONOTUS, *Fieb.*

Elongate, narrow. *Elytra* contracted before the middle.

Head vertical in front, a little wider across the eyes than long; transversely oval, but posteriorly produced into a neck, and distinctly narrowed; *Crown* flattish, slightly raised above the upper margin of the eyes and deflected to the base of the clypeus; *Clypeus* convex; base in a line with the anterior margin of the eyes; apex produced, and with the short antenniferous processes in a line with the middle of the lower half of the eyes; *Face* long, pointed; central lobe long, narrow, convex, prominent; side lobes short, narrow, somewhat parallel. *Antennæ* almost as long as the body; 1st joint cylindrical, shorter than the head; 2nd somewhat stout, 3 times longer than the 1st; 4th ⅔rds the length of the 3rd. *Eyes* large,

somewhat prominent, viewed from above semicircular, from the side short oval, perpendicular. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint much shorter than the head.

Thorax.—Pronotum longish trapeziform, with a narrow collar in front, and 2 almost obsolete callosities behind the latter; 3 times broader across the posterior margin than the anterior one; anterior margin indented in the middle, angles rounded; sides slightly concave; hinder angles short; posterior margin concave, rounded towards and at the hinder angles; disk very convex, and greatly deflected to the head. *Scutellum* triangular, considerably raised above the clavus, with a transverse channel in the centre, anterior portion in the middle almost flat, deflected to the transverse channel; basal angles concave, sides steep, and at their junction with the upper surface forming a narrow keel; hinder portion very convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, almost flat; anterior margin contracted before the middle; cuneus and membrane deflected. *Cuneus* somewhat long, narrow, triangular. *Sternum: Prosternum;* xyphus triangular, equilateral, distinctly margined; *Mesosternum* convex, somewhat depressed posteriorly, with a broad channel down the centre; *Metasternum* flattish convex, in the centre broad, the angle obtuse. *Legs* long, somewhat slender; *tarsi;* 3rd joint of the 3rd pair longer than the 2nd; 1st $\frac{3}{4}$ the length of the 2nd.

Abdomen very much narrowed at the base.

Species 1.—Systellonotus triguttatus.

Cimex triguttatus, *Lin.* S. N. 729. 94 (1767).
Lygæus — *Fab.* S. R. 239, 183 (1803).
Capsus — *Fall.* Hem. Suec. i, 121, 12 (1829); *Meyer,* Caps. 90, 74 (1843); *Sahlb.* Geoc. Fen. 92, 2 (1848); *Kirschb.* Caps. 51, 40, & 110, 40 (1855).
Cyllecoris triguttatus, *Hahn,* Wanz. ii, 99, fig. 185 (1835).
Capsus (Capsus) triguttatus, *Flor,* Rhyn. Liv. i, 480, 8 (1860).
Systellonotus — *Fieb.* Europ. Hem. 323 (1861).

Reddish-brown, sparingly clothed with somewhat erect, yellowish hairs. *Elytra; Clavus* with a narrow silver band; *Corium* with 2 broad silver-white bands. *Abdomen* very much contracted at the base.

Head reddish-brown. *Antennæ;* 1st joint yellowish or pale brownish-yellow; 2nd blackish; 3rd brownish, base yellowish; 4th reddish.

Thorax.—Pronotum pitchy brown. *Scutellum* pitchy brown. *Elytra* brownish-ochreous; *Clavus;* inner margin brown-black, base and apex brown; almost in the middle a narrow, transverse, silver-white band, narrowly margined with dark brown; *Corium;* anterior margin between the bands brown; before the middle, a broad, transverse, silver-white band, widest next the claval suture, extending about equally on both sides the claval band; margin, especially the posterior one, brown; at the apex a triangular silver-white patch, its apex not reaching to the posterior inner angle, the interior margin brown; *Cuneus* dark brown; *Membrane* brownish-black; between the apex of the cuneus and the inner cell-nerve a triangular whitish patch; cell-nerves black, apex whitish. *Legs* brownish-red; 1st pair palest; *tibiæ* with fine, somewhat spinose, yellow hairs; *tarsi* and *claws* brown.

Abdomen very much contracted at the base; underneath brown-black or black, clothed with fine, short, yellowish hairs.

Length, 2 lines.

Neither Fallén nor Dr. Fieber in their works, make any mention of the ♀ having undeveloped elytra; indeed Fallén describes both sexes as developed. Dr. Flor, however, points out that Kirschbaum was the first to observe the undeveloped form of the ♀, and he himself confirms the latter's statement. Flor says, "The elytra are only twice the length of the scutellum, so that they but cover the contracted portion of the abdomen; they are yellowish-brown, with a short silver band before the rounded apex; without clavus, cuneus, and membrane;" and he further observes that, "from its form and swiftness it bears great resemblance to an ant." He accounts for its difficulty of detection from its habit of running on the ground.

The only examples we have seen were in the collection of the late Mr. Curtis, but we cannot give the locality. Allen Hill, Langport, July (*Dale*). Dr. Flor says "not scarce on dry flat places, upon mountain sorrel overgrown with heather, in June and July."

Genus 3.—CAMPYLONEURA, *Fieb.*

Elongate, narrow, parallel.

Head vertical in front, transversely oval; *Crown* convex; *Clypeus* convex, apex in a line with the base of the antennæ; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central lobe short, narrow, convex; side lobes short, somewhat parallel. *Antennæ;* 1st joint as long as the head, stoutish, almost cylindrical, narrowed at the base; 2nd thinner, $3\frac{1}{2}$ times as long as the 1st, apex scarcely clavate; 3rd and 4th filiform, 3rd $\frac{1}{2}$ the length of the 2nd, 4th nearly as long as the 3rd. *Eyes* large, hinder margin resting on the anterior margin of the pronotum, viewed from above hemispherical, from the side, oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum longish trapeziform, with a constricted collar behind the slightly indented anterior margin, followed by 2 callosities connected in front by a very short transverse keel; sides from behind the collar very slightly sinuate; hinder angles rounded, slightly raised; posterior margin concave, rounded from the basal angles of the scutellum to the hinder angles; disk convex, deflected to the callosities. *Scutellum* large, triangular, equilateral, considerably raised above the clavus, with a transverse channel nearly in the centre; anterior portion convex, forming with that of the pronotum a continuous curve; sides next the base concave, perpendicular, rounded towards and at the basal angles; hinder portion convex; sides straight; disk with an indistinct central keel. *Elytra* longer than the abdomen; *Clavus* somewhat convex, deflected to the corium; *Corium* horizontal, flat at the base, convex towards the cuneus; *Cuneus* long, narrow, triangular. *Sternum: Prosternum;* xyphus triangular, equilateral, deeply channeled in the centre; *Mesosternum* short, convex, raised posteriorly, channeled in the centre; anterior margin keeled; posterior margin convex, notched in the middle; *Metasternum* convex. *Legs* longish, slender; 3rd pair longest; *tarsi* short, 2nd joint longer than the 1st; 3rd more than $\frac{1}{2}$ the length of the 2nd.

Species 1.—CAMPYLONEURA VIRGULA.

CAPSUS VIRGULA, *H. Schf.* Wanz. iii, 51, fig. 268 (1836).
CAMPYLONEURA VIRGULA, *Fieb.* Europ. Hem. 269 (1861).

Pale yellow, sparingly clothed with short, fine white hairs.

Head black; *Crown* on the inside of the hinder margin of the eyes with a yellow spot. *Antennæ* clothed with very short, fine white hairs; 1st joint yellow or red, apex brown; 2nd black, apex generally brownish-yellow; 3rd yellow, basal 3rd brown or red; 4th yellow. *Rostrum* yellow; tip black.

Thorax. — *Pronotum;* collar pale yellowish-white; callosities orange-reddish, with a small puncture in the centre; sides frequently narrowly bright red from behind the callosities; disk pale yellowish-white, finely punctured and transversely wrinkled. *Scutellum;* from the base to the transverse channel orange-yellow; sides brown; hinder portion pale yellow. *Elytra* diaphanous; *Clavus;* base reddish-brown; inner margin and suture, except the base of the latter, narrowly black; nerve pale brownish-yellow; disk pale pitchy brown; *Corium;* anterior margin black, extreme base reddish or reddish-brown; disk wax-white; between the apex of the clavus and the posterior inner angle, a pale piceous, oval patch; *Cuneus;* base bright lemon-yellow, generally paler next the anterior margin; apex bright carmine, frequently continued along the anterior margin for about $\frac{2}{3}$rds its length; *Membrane* blackish, iridescent, with a broad, clear, curved patch below the outer cell-nerve, and extending to the apex of the cuneus; cell-nerves bright-red. *Legs* pale yellow, clothed with short, fine, yellowish-white hairs; *thighs;* next the apex orange-yellow; *tibiæ;* 1st and 2nd pairs somewhat stout; 3rd pair with a few longish, somewhat spinose, brownish-yellow hairs; *tarsi;* extreme apex of the 3rd joint and *claws* black.

Abdomen.— ♂ yellow, clothed with short, fine, yellow hairs; ♀, apex of the ovipositor and a large round spot on the side of the 3rd genital segment black.

Length, $1\frac{2}{3}$—$1\frac{3}{4}$ line.

Not an uncommon species by beating beech trees at Wickham, also on palings at Bromley and Bexley, in August and September.

Genus 4.—IDOLOCORIS.

Elongate, narrow, parallel, or short and slightly oval; ♀ sometimes with rudimentary elytra.

Head vertical in front, as wide as, or wider across the eyes, than long; transversely oval, but posteriorly produced into a neck, and distinctly narrowed; *Crown* convex; *Clypeus* convex, apex in a line with the base of the antennæ; antenniferous processes very short, in a line with the middle of the lower half of the eyes; *Face* somewhat narrow; central lobe longish, convex; side lobes short, slightly concave outwardly. *Antennæ* of variable length, much shorter than the body; 1st joint cylindrical, longer or shorter than the head; 2nd clavate, 2½ to 3 times as long as the 1st; 3rd and 4th somewhat thinner, together as long as, or longer, than the 2nd. *Eyes* large, prominent, distended in front, viewed from above almost hemispherical, from the side, oval. *Rostrum* free, reaching to or beyond the 3rd pair of coxæ; 1st joint short, stout, not so long as the head.

Thorax.—Pronotum; long trapeziform, broader across the posterior margin than long; anterior margin slightly indented in the centre, with a broad collar and 2 callosities behind the latter; sides slightly concave; hinder angles raised, sometimes reflexed; posterior margin very concave, rounded towards and at the hinder angles; disk convex, deflected to the callosities, sometimes with a central longitudinal channel. *Scutellum* large, triangular, equilateral, considerably raised above the clavus, with a deep transverse channel a little before the middle; anterior and hinder portions convex. *Elytra* longer than the abdomen; *Clavus* flattish, deflected to the corium; *Corium* convex, horizontal as far as the junction with the cuneus and membrane, which are slightly deflected; *Cuneus* long, triangular. *Sternum: Prosternum*; xyphus longish, triangular, convex; *Mesosternum* convex, deeply channeled in the centre; posterior margin rounded, notched in the middle; *Metasternum* convex, angle obtuse, sometimes raised into a callosity in the middle. *Legs* long, or very long and slender; 3rd pair longest; *thighs* of all the pairs of nearly equal thickness, and with two rows of spots on each side next the apex; *tarsi* long, 2nd joint longest; 1st and 3rd of nearly equal length.

* Ἰδωλον, an idol, χόρις, a bug.

Species 1.—IDOLOCORIS PALLICORNIS.

BRACHYCERÆA PALLICORNIS (*Pict. Mey.*), *Fieb.* Europ. Hem. 324, 1 (1861).

Somewhat short, parallel, narrow. Pale greenish-yellow, very sparingly clothed with short, stiff, somewhat erect, brown hairs; *Corium* with minute brown spots, in each of which is set a hair; 3rd pair of legs long.

Head shining; *Crown* with 2 spots in a line with the hinder margin of the eyes, and 2 diverging streaks extending to the base of the antenniferous processes, pitchy black; neck behind the eyes frequently with a broad pitchy-black streak; *Face;* central lobe frequently black or brown. *Antennæ* pale yellow; 1st joint shorter than the head, brown; extreme base and apex narrowly white or yellowish-white; next the base with a black ring, centre frequently brownish-yellow; 2nd $2\frac{3}{4}$ times as long as the 1st; extreme base narrowly white, or yellowish-white, immediately followed by a broad black ring; 3rd and 4th together scarcely as long as the 2nd, 4th about $\frac{1}{2}$ as long as the 3rd. *Eyes* red or reddish-brown. *Rostrum* pale-yellowish; tip brown.

Thorax.—Pronotum pitchy black; anterior margin, callosities and a central line between the latter extending more or less along the disk, yellow; in the centre of each callosity a puncture, generally brown; hinder angles reflexed; disk transversely wrinkled, slightly depressed in the middle. *Scutellum* piceous; basal angles with a large triangular spot; disk slightly flattened next the transverse channel; sides from beyond the latter with a triangular streak not reaching to the apex. *Elytra* diaphanous; *Clavus;* inner margin piceous, between the apex of the latter and the nerve a more or less distinct pale piceous patch; *Corium;* anterior margin pale pitchy yellow, inner apical angle piceous; *Cuneus* whitish, apex black; *Membrane* very pale brown, iridescent, with an indistinct, somewhat oval, brownish spot a little below the apex of the inner cell nerve; cell-nerves stout, brown. *Legs* pale greenish-yellow, or pale yellow, clothed with very short, stiff, brown hairs; *thighs* with 2 short, longitudinal rows of brown spots next the apex; *tibiæ* with a few short, somewhat spinose, black hairs; *tarsi;* apex of the 3rd joint brown; *claws* reddish.

Abdomen underneath black or brown in the ♂; the 2 terminal and margins of the other segments greenish yellow in the ♀; in both sexes clothed with short yellowish hairs.

Length, 1½—1⅔ lines.

In immature examples the pronotum, with the exception of 2 piceous streaks between the callosities, the scutellum (sometimes with a piceous central streak) and the elytra with the exception of the pale brown tip of the cuneus, are entirely pale greenish-yellow, changing after death to pale yellowish-white; abdomen underneath greenish-yellow; the other characters as in mature specimens.

This species bears a great resemblance to *I. errans*, but may easily be separated from that insect by its smaller size, shorter antennæ and legs.

Not uncommon at Plumstead, Darenth, and Tunbridge Wells, in June, July, and August, by searching between the leaves of the common fox-glove, *Digitalis purpurea*.

Species 2.—Idolocoris annulatus.

Gerris annulatus, *Wolff*, Ic. Cim. 162, tab. 16, fig. 156 (1802).
Capsus — *H. Schf.* Wanz. iii, 52, 270 (1836); *Meyer*, Caps. 58 (1843); *Kirschb.* Caps. 47, 33 (1855).
Brachyceræa annulata, *Fieb.* Europ. Hem., 325, 3 (1861).

Short, slightly oval. Pale greenish or reddish-gray; *Antennæ* short; 3rd and 4th joints somewhat stout; *Pronotum* very faintly wrinkled transversely; *Corium* sparingly set with minute brown punctures, in each of which is a stiff, somewhat erect, brown hair.

Head yellow, shining; *Crown* with a black X-shaped patch, extending from the antenniferous processes to the hinder margin of the eyes; sides of the neck broadly black. *Antennæ* black; 1st joint shorter than the head, base and apex narrowly white; 2nd 2½ times as long as the 1st, with a yellow ring before or in the middle, apex narrowly white; 4th more than ½ the length of the 3rd, brownish. *Eyes* black. *Rostrum* yellow; 1st joint black, base of the 2nd black; tip brown.

Thorax.—*Pronotum* brownish or reddish-brown; collar white, or

yellowish-white, generally with 2 brown punctures on each side; callosities frequently reddish, their posterior margins, more or less, and a central line widened into a triangular patch, white, or yellowish-white. *Scutellum* black; basal angles and a central streak sometimes reaching beyond the transverse channel, reddish; sides with a triangular white spot. *Elytra* somewhat diaphanous; *Clavus* with a row of brown punctures within the inner margin, and another within the nerve; *Corium;* anterior margin and a short curved streak at the apex, brown-black; within the apex of the 1st nerve a roundish brown spot; disk punctures somewhat disposed in striæ; posterior margin reddish; *Membrane* blackish, iridescent, with a black or brownish-black triangular spot below the apex of the cuneus generally extending a little way within the inner cell, and immediately followed by a somewhat square pale spot; midway between the apex of the cells and the anterior margin, a roundish dark spot; cell-nerves brown; apex of the inner cell brown. *Legs* greenish, clothed with short, stiff, brown hairs; *thighs;* base on the upper side, with 2 short black or brown streaks, and two short longitudinal rows, generally consisting of 4 or 5 large brown spots, next the apex; *tibiæ* with large remote brown spots, in each of which is set a somewhat spinose, black hair; knees and apex of all the pairs narrowly brown; *tarsi;* 3rd joint brown; *claws* reddish.

Abdomen; underside brown, clothed with short, fine, yellow hairs, margins of the segments more or less yellow, or frequently greenish-yellow; sides brown.

Length, 1½ line.

A most abundant species on *Ononis spinosa* at Deal and Folkstone in September.

Species 3.—IDOLOCORIS GLOBULIFER.

CAPSUS GLOBULIFER, *Fall.* Hem. Suec. i, 124, 18 (1829); *Zett.* Ins. Lap. 279, 9 (1839).

— ALIENUS, *H. Schf.* Wanz. iii, 53, fig. 271 (1836); *Meyer,* Caps. 57 (1843); *Kirschb.* Caps. 48, 34 (1855).

— CYLLOCOROIDES, *Scholtz,* Arb. und Verand. 133, 64 (1846).

— (CAPSUS) GLOBULIFER, *Flor,* Rhyn. Liv. i, 512, 25 (1860).

BRACHYCERÆA GLOBULIFERA, *Fieb.* Europ. Hem. 325, 4 (1861).

Short, slightly oval. Pale brownish-yellow, very sparingly clothed with short, stiff, somewhat erect, brown hairs; *Antennæ* short; *Pronotum* very coarsely punctured and transversely wrinkled.

Head shining, black; *Crown* with 2 yellow spots next the hinder margin of the eyes, sometimes prolonged into a streak along the inner margin of the latter. *Antennæ* black or brown-black; 1st joint shorter than the head; base, and apex, especially the latter, narrowly white; 2nd 2½ times longer than the 1st; apex narrowly white; 3rd and 4th together as long as the 2nd, 4th ½ as long as the 3rd. *Eyes* black or dark reddish-brown. *Rostrum* reaching to the 2nd pair of coxæ, yellowish; base of the 1st and 2nd joints and tip brown.

Thorax.—Pronotum; callosities black, shining; disk very deeply punctured and transversely wrinkled; posterior margin concave, sometimes broadly piceous. *Scutellum* black, deeply wrinkled transversely in the middle from behind the transverse channel, sides not wrinkled, with a triangular yellow streak, nearly extending to the apex, the latter frequently narrowly reddish-brown. *Elytra* diaphanous; *Clavus* deeply and coarsely punctured, inner margin brown; *Corium* less deeply and not so coarsely punctured as the clavus; anterior margin pale yellowish-brown; *Cuneus;* apex narrowly brown; *Membrane* pale, very faintly iridescent; cell-nerves brownish-yellow. *Legs* yellow, sparingly clothed with very short brown hairs; *thighs* with 2 short, longitudinal rows of large brown spots near the apex; *tibiæ* with a few very short, somewhat spinose, brown hairs; *tarsi;* apex of the 3rd joint brown; *claws* reddish-yellow.

Abdomen underneath black or brown, sparingly clothed with very short, yellowish hairs.

Length, 1¾ line.

Apparently not a common species, though widely distributed; we have taken it at Lewisham, Eltham, and Bexley, by sweeping the flowers of *Lychnis dioica*, in May and July; Scarborough in June (*Wilkinson*); Wales (*Wollaston*).

Species 4.—IDOLOCORIS ERRANS.

GERRIS ERRANS, *Wolff*, Ic. Cim. 161, tab. 16, fig. 155 (1802).
CAPSUS COLLARIS, *Fall.* Hem. Suec. i, 125, 19 (1829); *Zett.* Ins. Lap. 279, 10 (1839); *Meyer*, Caps. 83, 63 (1843); *Kirschb.* Caps. 42, 24 (1855).
CYLLOCORIS COLLARIS, *Hahn*, Wanz. ii, 121, fig. 203 (1833).
POLYMERUS (BLEPHARIDOPTERUS) COLLARIS, *Kolen.* Mel. Ent. ii, 107, 81 (1845).
CAPSUS (CAPSUS) COLLARIS, *Flor*, Rhyn. Liv. i, 483, 9 (1860).
DICYPHUS ERRANS, *Fieb.* Europ. Hem. 325, 1 (1861).

Elongate, narrow, parallel, shining. Gray or yellowish-white, very sparingly clothed with short, stiff, somewhat erect, brown hairs. *Corium* with minute brown spots, in each of which is set a hair; anterior margin ciliate; 3rd pair of legs very long.

Head.—*Crown* with 2 diverging piceous streaks extending from behind the eyes to the antenniferous processes; sides of the neck piceous; *Face;* central and side lobes generally black. *Antennæ* brown, clothed with very short, fine, brown hairs; 1st joint scarcely longer than the head, frequently red, extreme base and apex narrowly white or pale yellowish-white, next the base with a blackish ring; 2nd 3 times as long as the 1st, extreme base and apex white or pale yellowish-white, sometimes pale brown in the middle; 3rd narrowly white or yellowish-white at the base. *Eyes* red-brown. *Rostrum* yellowish; base and apex more or less brown.

Thorax.—*Pronotum* brown or piceous; from between the callosities a pale streak extends nearly to the posterior margin; disk behind the callosities finely wrinkled transversely, and with a shallow central channel; sometimes the pronotum is entirely grayish-yellow, sides darker. *Scutellum* brown, sides from behind the transverse channel with a white or yellowish-white triangular spot. *Elytra* diaphanous; *Clavus;* inner margin and suture, except the base and apex of the latter, black; disk with a fuscous cloud next the inner margin; *Corium;* anterior margin very narrowly gray-brown; apex, as also that of the 1st nerve, with a triangular, piceous-brown spot; inner angle fuscous; *Cuneus;* apex more or less brown or red-brown; *Membrane* pale gray, iridescent, with a narrow pale-brown streak extending from below the inner cell-

nerves to the apex; inner marginal and cell-nerves brown. *Legs* white, or pale yellowish-white, clothed with short, stiff, brown hairs; *thighs* with 2 longitudinal, somewhat irregular rows of brown spots next the apex; *tibiæ* with a few somewhat spinose brown hairs; on the upperside of the knee a short brown streak; *tarsi* yellowish; base of the 1st joint narrowly, and 3rd brown; *claws* reddish.

Abdomen underneath pitchy brown or yellowish-brown, clothed with yellowish hairs.

Length, $2\frac{1}{3}$ lines.

In pale yellowish-white examples the spots on the corium are not so distinct, and the apical spots, as well as that of the cuneus, are red; frequently the ♀ has undeveloped elytra.

This is a very abundant species, in June and July, on *Stachys sylvatica*, *Epilobium*, and other plants. We have met with it at Lewisham, Eltham, Darenth, and other places in the London district. Mr. Wilkinson has also taken it at Scarborough.

Species 5.—IDOLOCORIS PALLIDUS.

CAPSUS COLLARIS, *Fall.* Hem. Suec. i, 125, 19 var. *β* (1829).
— PALLIDUS, *H. Schf.* Wanz. iii, 51, fig. 269 (1836); *Meyer*, Caps. 64 (1843); *Kirschb.* Caps. 42, 25 (1855).
— CONSTRICTUS, *Boh.* Vet. Akad. Förh. 32 (1852).
DICYPHUS PALLIDUS, *Fieb.* Europ. Hem. 325, 2 (1861).

Elongate, parallel, narrow, shining. Pale yellowish-white, very sparingly clothed with short, stiff, somewhat erect, brown hairs; *Corium* without brown spots; anterior margin somewhat ciliate; 3rd pair of legs very long.

Head yellow, behind the eyes sometimes a large black spot; *Face;* central lobe frequently brown at the base. *Antennæ* yellow, clothed with very short, brownish hairs; 1st joint as long as the head, red, base broadly and apex narrowly white, or yellowish-white; 2nd, base and apex narrowly white or yellowish-white, before the apex narrowly brown; 3rd and 4th brown, base of the 3rd white. *Eyes* brown or red-brown. *Rostrum* yellow, extreme tip brownish.

Thorax.—Pronotum on the sides below the callosities with a brown spot; disk behind the callosities very faintly wrinkled transversely,

and with a central longitudinal channel. *Scutellum* yellow. *Elytra* diaphanous: *Clavus* and *Corium* very pale yellowish-white; anterior margin of the latter somewhat darker; apex of the 1st nerve yellowish; within the apex of the 1st and 2nd nerves frequently a brownish spot; *Cuneus* very pale yellowish-white, apex very narrowly yellowish; *Membrane* pale gray, iridescent, with an oval fuscous spot near the apex of the anterior margin; inner marginal nerve yellowish; outer cell-nerve brown, apex and inner cell-nerve yellowish. *Legs* pale yellowish-white, clothed with short, stiff, pale brown hairs; *thighs* next the apex with 2 short, longitudinal rows of brown spots; *tibiæ* with a few, long, somewhat spinose, black hairs; *tarsi* yellow, 3rd joint brown; *claws* reddish.

Abdomen yellowish, clothed with short yellow hairs.

Length, 2⅓—2½ lines.

Very frequently the elytra are without darker markings, and the ♀ with undeveloped elytra, without cuneus or membrane. Not uncommon at Folkstone and Lewisham, in July, by sweeping amongst *Epilobium*, in damp places.

Genus 5.—MACROLOPHUS, *Fieb.*

Linear, narrow, delicate.

Head viewed from above pentagonal, deflected in front, produced into a neck behind the eyes, sides of the neck convex; *Crown* very convex; *Clypeus* convex, apex in a line with the base of the antennæ; antenniferous processes very short, almost in a line with the middle of the eyes; *Face* short, central lobe somewhat stout, convex, side lobes short, narrow, slightly rounded outwardly. *Antennæ* about as long as the body; 1st joint shorter than the head and neck, almost cylindrical, narrowed at the base; 2nd very slightly clavate, 2¼ times as long as the 1st; 3rd as long as the 2nd; 4th ½ as long as the 3rd, and slightly thicker. *Eyes* small, slightly prominent; viewed from above hemispherical, from the side short, oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint reaching to the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, about 1¾ times as broad across the posterior margin as long; behind the anterior margin a transverse channel forming a collar, and behind the latter 2 callosities; sides

straight; hinder angles rounded, somewhat raised; posterior margin concave, rounded toward and at the hinder angles; disk convex, deflected to the head, with a central channel extending throughout its entire length. *Scutellum* convex, slightly raised above the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* almost flat; *Corium* horizontal, flat between the claval suture and the 1st nerve, convex between the latter and the anterior margin; cuneus and membrane very slightly deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular; equilateral; *Mesosternum* somewhat convex; posterior margin convex; *Metasternum* flattish convex; centre raised into a callosity. *Legs* longish; *tarsi;* 2nd joint of the 3rd pair longer than the 3rd.

Species 1.—MACROLOPHUS NUBILUS.

CAPSUS NUBILUS (*H. Schf.*) *Panz.* F. G. 135, 9 (1805); *Meyer,* Cap. 73, (1843).
MACROLOPHUS NUBILUS, *Fieb.* Europ. Hem. 322, 2 (1861).

Bright green, clothed with yellow hairs. *Elytra* ciliate.

Head with a narrow black streak behind the eyes. *Antennæ* yellow; 1st joint black. *Eyes* black or brown. *Rostrum* yellow.

Thorax.—Pronotum with a central channel extending throughout its entire length. *Elytra; Cuneus* pale green; *Membrane* pale, iridescent, with an irregular, wavy, black, transverse band nearly midway between the cells and the apex, dividing the membrane into four somewhat oval patches of irregular size; the 1st and smallest, below the cuneus; the 2nd, somewhat larger, at the apex; the 3rd, at the inner posterior angle; and the 4th, and largest, between the outer cell-nerve and the 3rd patch; cells pale; cell-nerves bright green or yellow. *Legs* greenish or yellowish; *tibiæ* with very short, stout, somewhat spinose, yellow hairs; *tarsi,* apex of the 3rd joint brown; *claws* paler.

Abdomen green, or yellowish-green.

Length, 1¾ line.

After death this insect generally becomes entirely yellow, except the basal joint of the antennæ and the last joint of the tarsi, which retain their natural colour.

We have met with this pretty species in some numbers, by sweeping *Stachys sylvatica,* &c., in a wood near Lewisham, in June.

Genus 6.—Malacocoris, *Fieb.*

Short, narrow, suboval, very delicate.

Head almost vertical in front, wider across the eyes than long; transversely oval, but posteriorly produced into a neck; sides rounded and narrowed towards the base; behind the eyes a transverse channel; *Crown* convex; *Clypeus* convex, overhanging the face, apex in a line with the base of the antennæ; antenniferous processes short, in a line with the middle of the lower half of the eye; *Face* short, pointed; central lobe convex; side lobes very short, narrow, somewhat parallel. *Antennæ;* 1st joint cylindrical, a little longer than the pronotum; 2nd thinner than the 1st, 3 times as long; 3rd and 4th filiform, 3rd nearly as long as the 2nd, 4th ½ as long as the 3rd. *Eyes* small, somewhat prominent, viewed from above almost hemispherical, from the side, short oval. *Rostrum* reaching to the 2nd abdominal segment; 1st joint much shorter than the head.

Thorax.—Pronotum trapeziform, 1¾ times broader across the posterior margin than long, with 2 callosities behind the slightly indented anterior margin, angles rounded; sides straight; hinder angles short, acute; posterior margin concave; disk convex, deflected to the head. *Scutellum* large, triangular, convex, slightly raised above the clavus; with a transverse channel before the middle. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, somewhat flattish; cuneus and membrane deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, equilateral, with a deep fovea in the middle; *Mesosternum* convex; posterior margin convex, deeply notched in the middle; *Metasternum* shortened in the middle, very convex. *Legs* long, thin, 3rd pair longest.

Species 1.—Malacocoris chlorizans.

Lygæus chlorizans, *Panz.* F. G. 18, 21 (1794).
Phytocoris chorizans, *Fall.* Hem. Suec. i, 82, 10 (1829).
Capsus — *Meyer*, tab. 4, fig. 4, 76, 50 (1843).
— chlorizans, *Sahlb.* Geoc. Fen. 98, 13 (1848); *Kirschb.* Caps. 73, 83 (1855).
— (Capsus) chlorizans, *Flor*, Rhyn. Liv. i, 551, 46 (1860).
Malacocoris chlorizans, *Fieb.* Europ. Hem. 322, 1 (1861).

Pale yellowish-white, with irregular, interrupted, bright green, transverse bands; clothed with somewhat erect white hairs.

Head.—Pale yellowish-white. *Antennæ;* 1st joint with a short, narrow black streak in the middle of the underside; 2nd, with a black ring at the base. *Eyes* small, black. *Rostrum* green or yellow, tip brown.

Thorax.—*Pronotum* pale yellowish-white. *Scutellum* pale yellowish-white. *Elytra: Clavus;* inner margin below the scutellar angle and apex, narrowly dark green; disk pale at the base, more or less bright green in the middle; *Corium;* anterior margin and base pale yellowish-white; disk with 2 more or less interrupted, wavy, bright green bands; inner posterior margin, dark green; *Cuneus;* anterior margin, dark green; base more or less broadly bright green; *Membrane* very pale brownish-yellow, iridescent; cell-nerves green; base of the outer and the inner nerve pale; apical half of the outer cell bright green. *Legs* pale yellowish-white; *thighs;* 3rd pair sometimes greenish; *tibiæ* with short, very fine, somewhat spinose, whitish hairs; *tarsi* pale yellowish-white; 3rd joint sometimes, and *claws*, brown.

Length, 1¾ line.

Not an uncommon species by beating hazel in June and July, at Bexley and Mickleham.

Family 11.—ONCOTYLIDÆ.

Genus 1.—Anoterops, *Fieb.*

Elongate; ♂ somewhat parallel; ♀ sub-oval.

Head as long as broad across the eyes; *Crown* flattish; *Clypeus* convex, deflected, apex almost in a line with the base of the antennæ; antenniferous processes short, nearly in a line with the middle of the lower half of the eyes; *Face;* central lobe vertical, very convex, projecting considerably beyond the clypeus; side lobes short, narrow, somewhat triangular, very slightly rounded outwardly. *Antennæ* as long as the body; 1st joint as long as the head, stout, narrowed at the base; 2nd 3¼ times as long as the 1st, thickened to the apex; 3rd and 4th together longer than the 2nd and perceptibly thinner; 3rd stoutest at the base; 4th ⅓ the length of the 3rd. *Eyes* large

prominent; viewed from above almost spherical, from the side short oval. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint stout, reaching to the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, almost twice as broad across the posterior margin as long, with 2 callosities behind the anterior margin, angles rounded; sides slightly sinuate; hinder angles short, rounded; posterior margin almost straight in the middle, rounded towards and at the hinder angles; disk flattish, slightly deflected towards the head. *Scutellum* triangular, almost equilateral, raised above the clavus; near the base a transverse channel; basal portion flat, deflected to the transverse channel; hinder portion convex. *Elytra* of the ♂ considerably longer than the abdomen, of the ♀ as long as or a little longer; *Clavus* flattish between the inner margin and the nerve, deflected from the latter to the corium; nerve stout, prominent; *Corium* horizontal, slightly convex; 1st nerve stout, prominent; *Cuneus* long, triangular. *Legs* long, slender; 3rd pair longest; *tarsi* long; 2nd joint longer than the 3rd; 1st half as long as the 3rd.

Species 1.—Anoterops setulosus.

Capsus setulosus, *Meyer*, Caps. 53, 13, tab. 2, fig. 1 (1843).
Anoterops — *Fieb.* Europ. Hem. 297 & 392 (1861).

Gray-greenish, thickly clothed with short black hairs.

Head yellowish-green, with a central line, a short one on each side next the apex, a few spots on each side the crown, and a more or less interrupted transverse band at the hinder margin of the eyes, black; *Face;* central lobe black; *Antennæ* green, clothed with short black hairs; 1st joint at the base and apex narrowly black, and with a few black spots; 2nd at the apex, and 3rd and 4th, brownish-black; 2nd with a few black spots. *Eyes* black. *Rostrum* yellowish; 3rd and 4th joints black.

Thorax.—Pronotum; hinder and inner margins of the callosities, hinder angles, and a lunate patch on each side the centre of the posterior margin, 2 punctures on the callosities, and 1 or 2 spots on the disk behind the latter, black. *Scutellum* at the basal angles with a few black spots, frequently with a brownish line on each side the centre; hinder portion wrinkled transversely; sides with a narrow, triangular, black streak. *Elytra: Clavus;* inner margin black; nerve and suture paler than the disk, and without hairs;

Corium; anterior margin black; nerves paler than the disk, and without hairs; *Cuneus;* anterior margin black; *Membrane* brownish-black, slightly iridescent, anterior margin darker; inner marginal nerve black; cell-nerves white; cells and the entire outer margin of the outer cell black. *Legs* gray-greenish, clothed with short black hairs; *thighs* with 2 somewhat irregular longitudinal rows of large black spots next the apex; 3rd pair in addition with 2 rows on the upper side extending throughout their entire length; *tibiæ;* knees brown, apex black, and with deep black spots, in each of which is set a long, stout, somewhat spinose, black hair; *tarsi* and *claws* black.

Abdomen.—Upperside blackish, connexivum and underside greenish.

Length, 3½—3¾ lines.

Capsus setulosus, H. Sch., 'Wanz.,' iv, 30, fig. 380, and *Capsus* (*Capsus*) *setulosus*, Flor, 'Rhyn. Liv.,' i, 631, 102, belong to the genus *Cylindromelus*, Fieb., 'Europ. Hem.,' 392 and 393.

We took several examples of this insect by sweeping amongst *Centaurea nigra*, &c., at Hurst Wood, Tunbridge Wells, in the beginning of September. Unlike the majority of the Hemiptera, when handled it gives off an exceedingly agreeable odour, much resembling that of ripe jargonelle pears.

Genus 2.—Macrocoleus, *Fieb.*

♂ elongate, somewhat parallel; ♀ suboval.

Head wider across the eyes than long, pointed; *Crown* flattish, deflected; *Clypeus* convex, apex almost in a line with the middle of the eyes; side lobes somewhat prominent; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central lobe prominent, convex; side lobes short, stout, rounded outwardly. *Antennæ* shorter than the body; 1st joint shorter than the head, somewhat cylindrical; 2nd clavate, 3½ times as long as the 1st; 3rd and 4th somewhat filiform; 3rd about ⅔rds the length of the 2nd; 4th about ½ as long as the 3rd. *Eyes* prominent; viewed from above almost spherical, from the side oval. *Rostrum* almost reaching to the middle of the abdomen; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—*Pronotum* short, trapezoidal, twice as broad across the posterior margin as long, with 2 callosities behind the indented anterior margin, angles rounded; sides straight; hinder angles short, rounded; posterior margin almost straight; disk convex,

deflected to the head. *Scutellum* triangular, almost level with the clavus, with a transverse channel near the base; sides very slightly convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, flattish between the claval suture and the 1st nerve, from the latter to the anterior margin convex; cuneus and membrane deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, apex acute; *Mesosternum;* posterior margin convex, faintly notched; *Metasternum* slightly convex; angle prominent. *Legs: tarsi;* 2nd joint longer than the 3rd; 1st ⅔rds of the 2nd.

Species 1.—Macrocoleus mollicullus.

Phytocoris mollicullus, *Fall.* Hem. Suec. i, 82, 12 (1829).
Capsus — *H. Schf.* Wanz. vi, 32, 589 (1842); *Meyer,* Caps. 78, 54 (1843); *Sahlb.* Geoc. Fen. 103, 25 (1848); *Kirschb.* Caps. 80, 101 (1855).
— ochroleucus, *Kirschb.* Caps. 88, 117 (1855) ?
— (Capsus) mollicullus, *Flor,* Rhyn Liv. i, 611, 88 (1860).
Macrocoleus — *Fieb.* Europ. Hem. 321, 7 (1861).

Yellowish, greenish-yellow, or grayish-green, clothed with black or brownish-black hairs, which have a yellow appearance in certain lights.

Head.—Antennæ yellowish, sometimes yellowish-brown, clothed with very short blackish hairs. *Eyes* dark brown. *Rostrum* greenish-yellow, tip black.

Thorax.—Pronotum slightly convex. *Scutellum* deflected to the transverse channel, flattish; hinder portion convex. *Elytra; Clavus* pale brownish, suture pale; *Corium;* anterior margin brown; disk next the apex with an irregular transverse, brown band divided by the pale nerve, between the band and the inner angle of the cuneus a triangular pale patch; *Cuneus* brown, base pale; *Membrane* brownish, iridescent; entire margin and a spot near the apex of the anterior margin darker; between the apex of the cuneus and the inner cell-nerve a triangular whitish spot, immediately below which is a square black spot; cell-nerves yellowish; cells yellowish brown, inner cell black. *Legs* pale yellow; *thighs* on the underside with a longitudinal row of minute brown spots, on the upperside next the apex with a few scattered brown spots; *tibiæ* with long, somewhat spinose, blackish or brownish hairs; *tarsi* brownish-yellow, 3rd joint and *claws* black.

Abdomen underneath greenish or yellowish.

Length, 2—2½ lines.

A very abundant and widely distributed species on *Tanacetum vulgare*, in July. At Folkestone, Weybridge, Lee, and other places in the London district.

Species 2.—MACROCOLEUS PAYKULLII.

PHYTOCORIS PAYKULLII, *Fall.* Hem. Suec. i, 106, 57 (1829).
CAPSUS MACULIPENNIS, *Meyer*, Caps. 81, 60 tab. 5, fig. 1 (1843); *Kirschb.* Caps. 81, 104 (1855).
MACROCOLEUS PAYKULI, *Fieb.* Europ. Hem. 319, 2 (1861).

Green or whitish-green, clothed with short black hairs disposed in small irregular patches.

Head brown. *Antennæ* greenish; 1st joint in the middle black, apex narrowly pale; 2nd brown, black at the base; 3rd and 4th yellowish-brown. *Rostrum* brownish, tip black.

Thorax.—Pronotum in front to behind the callosities sometimes brown. *Scutellum* between the base and the transverse channel generally brownish or yellowish-brown. *Elytra* clothed with short black hairs disposed in small irregular patches; *membrane* blackish, faintly iridescent; between the apex of the cuneus and the inner cell-nerve a triangular white spot and from the latter to the anterior margin a curved white streak; immediately below the apex of the cuneus a square black patch, underneath which is a roundish white spot; inner marginal nerve black; cell-nerves white, inner cell black; *Legs* greenish; *thighs* very sparingly clothed with short, fine, black hairs; *tibiæ* with fine, short, black, erect hairs; *tarsi* and *claws* brown.

Length, 1⅓—1½ line.

An exceedingly abundant species, on *Ononis spinosa*, at Folkestone, in July. Scarborough, in September (*Wilkinson*).

Genus 3.—AMBLYTYLUS, *Fieb.*

Elongate, slightly oval.

Head long, very much deflected; length about equal to the breadth across the eyes; *Crown* convex; *Clypeus* convex, and forming a continuous curve with the crown, apex considerably in

front of the eyes, and in a line with the middle of their upper half; side lobes oval, stout; antenniferous processes short, in a line with the lower margin of the eyes; *Face;* central lobe long, broad, convex, produced in front of the clypeus; side lobes long, narrow. *Antennæ* shorter than the body; 1st joint stout, shorter than the head, somewhat cylindrical; 2nd stout, 3 times as long as the 1st, gradually thickened to the apex; 3rd and 4th almost filiform, 3rd about $\frac{3}{4}$ths the length of the 2nd, 4th about $\frac{1}{4}$ of the 3rd. *Eyes* small, prominent; viewed from above hemispherical, from the side short oval. *Rostrum* long, reaching to the 2nd abdominal segment; 1st joint reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, with 2 callosities in front, twice as broad across the posterior margin as long; anterior margin concave, angles rounded; sides straight, somewhat margined, the margin widest next the acute hinder angles; posterior margin convex, indented in the middle; disk flattish convex, deflected to the head. *Scutellum* triangular, equilateral, almost level with the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex, almost flat between the claval suture and the 1st nerve. *Sternum: Prosternum;* xyphus longish triangular, sides somewhat convex; *Mesosternum* convex, somewhat shortened posteriorly, and faintly notched in the middle; *Metasternum;* centre flattish convex, angle acute, prominent. *Legs: tarsi;* 2nd joint of the 3rd pair longest; 1st and 3rd of almost equal length.

Species 1.—AMBLYTYLUS AFFINIS.

Pale brownish or greenish-yellow, clothed with short, somewhat erect, black hairs.

Head ochreous, with a broad, paler central line extending to the apex of the face; *Clypeus;* side lobes slightly overlying the central lobe of the face, thereby causing the latter to assume a somewhat spatulate form. *Antennæ* clothed with very short black hairs; 1st joint greenish-yellow; 2nd, 3rd, and 4th, brownish-yellow. *Eyes* pitchy-brown. *Rostrum* greenish-yellow, tip brown.

Thorax.—Pronotum to behind the callosities yellowish-green, and with a V-shaped channel between them; disk brownish-green; sides and a central line, most distinct between the callosities, pale greenish-yellow. *Scutellum* green, with a paler central line. *Elytra: Clavus* pale brownish-yellow; *Corium;* anterior margin

greenish-yellow, between the 1st nerve and the claval suture pale brownish-yellow, the colour spreading across the disk, and gradually becoming paler, until absorbed in the ground colour; *Cuneus* greenish-yellow; *Membrane* brownish, faintly iridescent; cell-nerves stout, white, externally margined with brown; cells brown, outer one paler at the base. *Legs* pale brownish-yellow; *thighs;* 3rd pair at the apex brownish, and with a few minute black spots; *tibiæ* yellowish, with short, somewhat spinose, black hairs; *tarsi* brown; 3rd joint at the apex, and *claws* black.

Length, $2\frac{1}{4}$ lines.

Since its capture this insect has faded much in colour, and the description has been drawn up from its present appearance. It was submitted to Dr. Fieber for determination, who returned it with the above manuscript name and with the following note attached:—"Allied to *Amblytylus nasutus*, but with different markings on the membrane. Also like *Oncotylus tanaceti*, in having no cell-hooks. It also resembles *Macrocoleus sordidus*, but the latter has another form of head and different markings on the membrane, the 2 blackish spots on the thorax shining through from the mesonotum."

A single specimen taken at Eltham, in July, by sweeping short grass, &c.

Genus 4.—TINICEPHALUS, *Fieb.*

Longish, narrow; ♂ almost parallel; ♀ suboval.

Head almost vertical in front, twice as broad across the eyes as long; *Crown* slightly convex, somewhat deflected; *Clypeus* more or less convex, apex nearly in a line with the short antenniferous processes, and almost level with the anterior margin of the eyes; antenniferous processes below the middle of the lower half of the eyes; *Face;* central lobe short, somewhat narrow, convex; side lobes short, broad, parallel, somewhat rounded outwardly. *Antennæ* shorter than the body; 1st joint about $\frac{3}{4}$rds the length of the head; 2nd $3\frac{1}{2}$ times as long as the 1st, thickened to the apex; 3rd and 4th together longer than the 2nd, and perceptibly thinner, 3rd as long as the 2nd, 4th $\frac{1}{2}$ as long as the 3rd. *Eyes* large, somewhat prominent; viewed from above almost spherical, from the side short oval. *Rostrum* reaching to the 3rd abdominal segment; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, twice as broad across the

posterior margin as long, with 2 more or less distinct callosities behind the slightly indented anterior margin, angles rounded; sides straight; hinder angles short; posterior margin straight, slightly rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* triangular, equilateral, raised above the clavus, with a transverse channel near the base; anterior portion flattish, deflected to the transverse channel; hinder portion convex, sides slightly convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, convex; *Cuneus* longish, triangular, somewhat broad at the base. *Sternum: Prosternum;* xyphus triangular, convex, with a very narrow margin anteriorly; *Mesosternum* convex, elevated posteriorly; posterior margin convex, notched in the middle; *Metasternum* slightly convex, margin prominent. *Legs; tarsi* long; 2nd joint of the 3rd pair longer than the 3rd; 1st more than $\frac{1}{3}$rd the length of the 2nd.

Species 1.—TINICEPHALUS OBSOLETUS.

Pale greenish-white, clothed with fine, long, silvery-white hairs, which in certain lights appear black or brown.

Head yellow. *Antennæ* greenish-yellow, clothed with very short white hairs; 3rd and 4th joints brownish. *Eyes* black or brown-black. *Rostrum* yellowish; 4th joint black.

Thorax.—Pronotum pale greenish; anterior margin and sides paler. *Scutellum*, between the base and transverse channel, yellowish. *Elytra* diaphanous, thickly and minutely punctured, and clothed with fine, long, silvery-white hairs, which in certain lights appear black or brown; *Clavus;* inner margin narrowly piceous; *Corium;* anterior margin narrowly greenish; *Cuneus;* anterior margin narrowly greenish or yellowish-green, rounded at the base, and leaving a small but distinct notch; inner basal angle broadly pale; *Membrane* pale fuscous, iridescent; outer cell-nerve with a darker margin exteriorly; between the apex of the cuneus and the inner cell-nerve, and from thence to the apex of the anterior margin, 2 brown streaks forming a Γ-shaped patch; inner marginal nerve piceous; cell-nerves white; inner cell blackish at the apex. *Sternum* greenish-yellow. *Legs* yellowish, clothed with very short, silvery-white hairs; *tibiæ* with stout, somewhat spinose, black hairs; *tarsi;* 3rd joint, sometimes the apex only, and *claws*, brown.

Abdomen pale or greenish-yellow; underneath clothed with short, silvery-white hairs.

Length, $1\frac{3}{4}$—2 lines.

A common species on furze and broom bushes near Blackheath, in July. Dr. Fieber has seen the insect, and pronounced it to be distinct.

Genus 5.—Oncotylus, *Fieb.*

♂ elongate, somewhat narrow; ♀ sometimes suboval.

Head as broad across the eyes as long, deflected; *Crown* and *Clypeus* convex, forming a continuous curve; apex of the latter in a line with the middle of the eyes; side lobes prominent, convex; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central lobe very convex, prominent; side lobes short, somewhat triangular, rounded outwardly. *Antennæ;* 1st joint almost as long as the head; 2nd 4 times as long as the 1st, slightly thickened to the apex; 3rd and 4th filiform; 3rd, ♂ almost as long as the 2nd, ♀ $\frac{2}{3}$rds as long; 4th $\frac{1}{2}$ of the 3rd. *Eyes* somewhat prominent, ♂ more so than the ♀; viewed from above almost hemispherical, from the side oval; shorter in the ♀ than the ♂. *Rostrum* stout, reaching to the 3rd pair of coxæ; 1st joint shorter than the head.

Thorax.—Pronotum trapeziform, twice as broad across the posterior margin as long, with 2 callosities behind the slightly indented anterior margin, angles rounded; sides straight; hinder angles short, obtuse; posterior margin straight in the middle, rounded from within the basal angles of the scutellum towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* triangular, equilateral, raised above the clavus, with a transverse channel near the base; hinder portion convex. *Elytra* considerably longer than the abdomen; *Clavus* convex, deflected to the corium; nerve stout, prominent; *Corium* horizontal, slightly convex, base flat; cuneus and membrane deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, pointed; *Mesosternum* shortened behind, notched in the middle; *Metasternum* short, somewhat obtuse. *Legs; tarsi* short, 2nd and 3rd joints of equal length; 1st $\frac{1}{3}$rds of the 2nd.

Species 1.—ONCOTYLUS DECOLOR.

CAPSUS DECOLOR, *Full.* Hem. Suec. i, 123, 16 (1829); *Meyer*, Caps. 86, 68 (1843); *Sahlb.* Geoc. Fen. 95, 8 (1848); *Kirschb.* Caps. 77, 91 (1855).
LOPUS CHRYSANTHEMI, *Hahn*, Wanz. i, 10, fig. 4 (1831).
CAPSUS (CAPSUS) DECOLOR, *Flor*, Rhyn. Liv. i, 555, 49 (1860).
ONCOTYLUS DECOLOR, *Fieb.* Europ. Hem. 293, 1 (1861).

Head yellowish; *Crown* with a blackish-brown spot near the hinder margin of each eye, and frequently a broad streak, sometimes united to the spot, extending along the inner margin of the eyes to the base of the antenniferous processes; *Clypeus;* apex of the side lobes brown; *Face;* outer margin of the central lobe generally narrowly brown. *Antennæ* brownish-yellow; apex of the 1st joint and base of the 2nd narrowly brown; 3rd and 4th blackish. *Eyes* blackish-brown. *Rostrum* pitchy-brown, tip black.

Thorax.—Pronotum generally greenish-gray; callosities blackish. *Scutellum* between the base and the transverse channel yellow, or basal angles orange-yellow, centre blackish; hinder portion black, yellowish, or grayish-white, in the latter case with a pale longitudinal line. *Elytra: Clavus;* inner margin black; disk fuscous; base of the nerve white nearly as far as the scutellar angle; *Corium*, anterior margin yellowish-white; disk fuscous; 1st nerve broadly white, broadest next the cuneus; *Cuneus* yellowish-white, base paler. *Membrane* pale fuscous black, iridescent; inner marginal nerve black; cell-nerves yellowish-white; base of both cells blackish. *Legs* greenish or grayish-white; *thighs;* 3rd pair frequently brownish next the apex; *tibiæ* with short, somewhat spinose, black hairs; apex narrowly black; base frequently brown; *tarsi* and *claws* black.

Abdomen.—♂ underside black; margins of the segments and connexivum more or less broadly yellowish or greenish-yellow; ♀ yellow; margins of the segments more or less black.

Length, 2¼—2½ lines.

The ♂ is always darker than the ♀, and sometimes the space between the 1st nerve of the corium and the anterior margin white. It is also much scarcer than the ♀.

Abundant in a field at Eltham, by sweeping amongst short grass, &c., in July, and on Dartford Brent, amongst ferns, &c., in August.

Species 2.—Oncotylus Tanaceti.

Phytocoris Tanaceti, *Fall.* Hem. Suec. i, 83, 13 (1829).
Miris — *Germ.* Faun. Ins. Eur. fas. 16, tab. 15 (1813).
Capsus — *H. Schf.* Wanz. iii, 85, fig. 309 (1836); *Kirschb.* Caps. 80, 102 (1855).
— (Capsus) Tanaceti, *Flor,* Rhyn. Liv. i, 610, 87 (1860).
Oncotylus Tanaceti, *Fieb.* Europ. Hem. 299, 3 (1861).

Green or yellowish-green, somewhat thickly clothed with black hairs.

Head.—Crown with a black or brown spot near the hinder margin of the eyes, frequently continued into a brown streak along their inner margin; *Face;* basal angles of the central lobe sometimes with a small black spot. *Antennæ* yellow, clothed with very short black hairs; 1st joint sometimes greenish. *Rostrum* yellow; 4th joint black.

Thorax.—Pronotum frequently with an ×-shaped patch between the callosities. *Scutellum* sometimes with a short black streak on each side the centre of the transverse channel. *Elytra; Cuneus* pale at the base; *Membrane* brown, iridescent; anterior margin and a patch within the apex broadly darker; inner marginal nerve brown; cell-nerves yellowish or yellowish-white; cells black; outer cell paler at the base. *Legs* yellow, clothed with very short, fine, black hairs; *thighs* on the upperside, next the apex, with a few brown spots, on the underside with a longitudinal row; *tibiæ* with brown spots, in each of which is set a stout, somewhat spinose, black hair; apex narrowly brown; *tarsi* brown; 3rd joint and *claws* black.

Length, 1¼—2 lines.

Abdomen.—♂ above black, last segment and connexivum yellowish-green; underneath yellowish-green, clothed with fine, short, yellow hairs; ♀ entirely yellow or greenish-yellow.

According to Fieber, and other authors, this is a common species on the Continent, and taken in company with *Macrocoleus molliculus* on *Tanacetum vulgare.* We have, however, only met with a few examples by sweeping amongst flowers, &c., on a hedge bank between Leatherhead and Mickleham, in July, and at Newport, South Wales, in August, by beating bramble bushes.

Species 3.—Oncotylus pilosus.

♀ grayish-green, thickly clothed with long black hairs.

Head greenish-yellow. *Antennæ* brown, clothed with short black hairs; apex of the 2nd joint narrowly black. *Eyes* black. *Rostrum* brown; 1st joint greenish-yellow, 4th black.

Thorax.—Pronotum greenish-yellow; *Scutellum* yellowish-green. *Elytra: Clavus;* inner margin brown, apex narrowly black; nerve and suture destitute of hairs, paler than the disk; *Corium;* anterior margin yellowish; nerves without hairs and paler than the disk; hairs thickly set next the posterior margin, between the inner angle and the cuneus, forming a somewhat triangular patch; *Cuneus;* anterior margin slightly yellowish, base narrowly pale; *Membrane* brownish-black, faintly iridescent; between the apex of the cuneus and the inner cell a pale triangular patch, and below the apex of the outer cell another pale patch; below the apex of the inner cell-nerve a brown spot, between this and the apex of the anterior margin a large triangular dark patch, in which is a short pale streak extending from the brown spot nearly to the anterior margin; inner marginal nerve piceous; cell-nerves yellowish-white; cells blackish. *Legs* brownish-green, clothed with short black hairs; *tibiæ* with a few stout, somewhat spinose, black hairs, apex blackish; *tarsi* brown; 3rd joint and *claws* black.

Abdomen.—Upperside yellowish; connexivum yellowish; underneath yellowish, middle brownish.

Length, 2½ lines.

A single example, by sweeping amongst *Ononis spinosa*, &c., in August, between Sandersted and Addington. Dr. Fieber has seen the specimen, and returned it as a new species.

Genus 6.—Hoplomachus, *Fieb.*

Longish, suboval.

Head very much deflected, broader across the eyes than long; *Clypeus* convex, base almost level with the anterior margin of the eyes; apex projecting, in a line with the middle of the eyes; side lobes longish, prominent, convex; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central

lobe longish, convex, prominent; side lobes short, narrow. *Antennæ* short, about ½ as long as the body; 1st joint stout, somewhat clavate; 2nd 2½ times longer than the 1st, thickened to the apex; 3rd and 4th filiform, stoutish, 3rd ⅔rds the length of the 2nd, 4th over ½ the length of the 3rd. *Eyes* large, somewhat prominent; viewed from above hemispherical, from the side short oval. *Rostrum* reaching to the 2nd or 3rd abdominal segment; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, nearly twice as broad across the posterior margin as long, with 2 callosities in front; anterior margin indented in the middle, angles rounded; sides straight; hinder angles short, rounded; posterior margin nearly straight in the middle, rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* triangular, considerably raised above the clavus, with a transverse channel near the base; sides slightly convex; anterior portion flattish in the middle, slightly deflected to the transverse channel; hinder portion convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; nerve stout, somewhat prominent; *Corium* horizontal, convex, flattish at the base between the claval suture and the 1st nerve; cuneus and membrane deflected; *Cuneus* longish, triangular; base somewhat broad. *Sternum: Prosternum;* xyphus longish, triangular, pointed; sides somewhat convex; *Mesosternum* convex, elevated posteriorly, with a central channel; posterior margin almost straight; *Metasternum* convex, centre prominent. *Legs: tarsi;* 2nd joint of the 3rd pair as long as the 3rd; 1st about ½ as long as the 2nd.

Species 1.—Hoplomachus Thunbergii.

Miris Thunbergii, *Germ.* Faun. Ins. Eur. fas. 13, tab. 19 (1813).
Phytocoris Thunbergii, *Fall.* Hem. Suec. i, 105, 56 (1829).
Lopus Hieracei, *Hahn,* Wanz. i, 144, fig. 73 (1831).
Capsus Thunbergii, *Meyer,* Caps. 81, 59 (1843); *Sahlb.* Geoc. Fen. 110, 41 (1848); *Kirschb.* Caps. 82, 106 (1855).
— (Capsus) Thunbergii, *Flor,* Rhyn. Liv. i, 608, 86 (1860).
Hoplomachus Thunbergii, *Fieb.* Europ. Hem. 316, 1 (1861).

Yellowish or brownish-yellow, clothed with black hairs; nerves of the clavus and corium paler.

Head.—Crown with a large black or brown spot between the eyes,

sometimes united, and frequently continued into a broad streak along their inner margin as far as in a line with the apex of the clypeus. *Antennæ* clothed with short black hairs; 1st and 2nd joints brownish-yellow or brownish, 3rd and 4th blackish. *Rostrum* brown; 1st joint brownish-yellow.

Thorax.—*Pronotum* yellowish in front of the callosities, the latter black or brown; disk with a pale-yellowish or greenish-white central line extending throughout the entire length; posteriorly wrinkled transversely, and somewhat thickly covered with very minute brown punctures. *Scutellum;* basal portion yellowish; transverse channel black, or with a black spot on each side the centre; hinder portion very minutely brown punctured, and with a pale-yellow or greenish-white central line. *Elytra; Clavus* transversely wrinkled, inner margin narrowly black; nerve greenish or yellowish-white; *Corium* finely wrinkled transversely; anterior margin ciliate, pale yellowish-white, with a short pale streak within the latter at the apex; 1st nerve yellowish-white, the colour extending more or less towards the claval suture as it approaches the apex; disk somewhat thickly covered with very minute brown punctures; posterior margin pale; *Membrane* blackish; between the apex of the cuneus and the cells a pale triangular patch; inner marginal nerve brown; cell-nerves pale yellowish-white. *Sternum: Mesosternum;* anterior margin and central channel black. *Legs; coxæ* pale yellow, extreme base black; *thighs* yellowish or brownish-yellow, clothed with short black hairs, with a few brown spots on the upperside next the apex; *tibiæ* yellowish, with fine, somewhat spinose, black hairs; kneesgenerally and apex blackish or brown; *tarsi* and *claws* black or brown.

Abdomen.—Upperside black, margin of the connexivum yellow; underneath black, clothed with short black hairs; margins of the segments more or less broadly yellow.

Length, 2 lines.

Hitherto a scarce species with us. We have examples from Mr. Harding, but without date or locality. It has also been taken by Dr. Power, at Birch Wood, in July. Dr. Fieber says, "on dry hilly places, overgrown with short grass, very common in June."

Genus 7.—CONOSTETHUS, *Fieb.*

♂ short, narrow, parallel; ♀ slightly suboval.

Head short, almost vertical in front, twice as broad across the

eyes as long; *Crown* flat; *Clypeus* convex, apex and the short antenniferous processes in a line with the underside of the eyes; side lobes somewhat triangular, stout, convex; *Face* obtuse, central lobe convex, stout; side lobes short, somewhat triangular, outwardly slightly concave. *Antennæ* shorter than the body; 1st joint stout, $\frac{3}{4}$ths as long as the head; 2nd stout, thickened to the apex, $2\frac{1}{2}$ times longer than the 1st; 3rd and 4th thinner, 3rd about $\frac{3}{4}$ths as long as the 2nd, 4th somewhat fusiform, as long as the 1st. *Eyes* large, prominent, their hinder margins resting on the anterior margin of the pronotum; viewed from above almost spherical, from the side short oval. *Rostrum* stout, reaching to the 3rd pair of coxæ; 1st joint almost reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform; $2\frac{1}{4}$ times as broad across the posterior margin as long, with 2 callosities behind the concave anterior margin, angles rounded; sides concave; hinder angles short, acute, slightly raised; posterior margin slightly concave, rounded from the basal angles of the scutellum towards and at the hinder angles; disk flattish in the middle, deflected to the head, sides convex. *Scutellum* triangular, equilateral, slightly raised above the clavus, with a transverse channel near the base; anterior portion flat, deflected to the transverse channel; hinder portion flattish in the middle; sides convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, convex, flattish at the base between the claval suture and 1st nerve; cuneus and membrane slightly deflected; *Cuneus* long, narrow, triangular. *Sternum: Prosternum;* xyphus short, triangular, strongly margined; *Mesosternum;* posterior margin notched in the centre, sides convex; *Metasternum* short, conical. *Legs: tibiæ;* 3rd pair slightly bent inwardly below the base; *tarsi* long; 2nd and 3rd joints almost of equal length; 1st very short; *claws* long.

Species 1.—Conostethus roseus.

Capsus roseus, *Fall.* Hem. Suec. i, 124, 17 (1829).
— (Capsus) aridellus, *Flor*, Rhyn. Liv. i, 556, 50 (1860).
Conostethus roseus, *Fieb.* Europ. Hem. 299 & 393, 394 (1861).

♂ brownish-pink, clothed with very short, fine, white hairs.

Head black, dull; *Crown* with a small, shining, black spot near the hinder margin of each eye; *Clypeus* in front, with a W-shaped patch, and side lobes yellowish-white; *Face;* central lobe yellow,

base sometimes blackish. *Antennæ* black. *Eyes* brown or brownish-black. *Rostrum;* 1st and 2nd joints yellow; 3rd brownish; 4th black.

Thorax.—Pronotum black, dull; side margins narrowly and a central streak, yellow. *Scutellum* black; basal angles more or less reddish or reddish-yellow, or the base as far as the transverse channel, brownish or reddish-yellow; hinder portion with a yellow central line. *Elytra: Clavus;* inner margin narrowly black; disk brownish-pink, occasionally pale reddish; nerve rosy; *Corium* pale yellow between the 1st nerve and the anterior margin; the former broadly yellowish-white; sometimes its outer margin towards the apex narrowly pale reddish; base sometimes reddish; between the claval suture and the 1st nerve brownish-pink; *Cuneus* pale yellow; *Membrane* brownish-black, iridescent; cell-nerves reddish or brownish-red; inner cell frequently white. *Sternum* black; base of the coxæ yellowish. *Legs; thighs* brownish, with a few black spots on the upperside next the palish apex; 3rd pair darkest, with a longitudinal row of black spots on the underside; *tibiæ* brownish-yellow, sparingly set with short, somewhat spinose, black hairs; *tarsi* brownish-yellow; 3rd joint and *claws* black.

Abdomen black, clothed with short golden yellow hairs on the underside.

♀ rosy, clothed with very short, fine, white hairs.

Head yellowish; *Crown* with 2 brown spots near the hinder margin of the eyes; *Face;* central lobe, at the base, in the middle, with a very short brown streak. *Antennæ* yellow; 3rd and 4th joints brownish, apex of the latter reddish-brown. *Rostrum* yellowish; 4th joint black.

Thorax.—Pronotum yellowish or dark grayish-yellow, sometimes with a reddish tinge; margins narrowly yellowish-white; central line yellow or pale green. *Scutellum* rosy, reddish-yellow, or greenish-yellow; central line pale yellowish-white. *Elytra: Clavus;* inner margin narrowly black; disk yellow, with a rosy tinge; nerve rosy; *Corium* from the anterior margin to beyond the 1st nerve pale yellowish-white; apex between the 1st nerve and the anterior margin more or less rosy, thence to the claval suture rosy; *Cuneus* pale yellowish-white; *Membrane* paler than in the ♂; inner marginal nerve brownish-black; cell-nerves rosy. *Sternum* greenish-yellow. *Legs* yellowish; other characters as in the ♂.

Abdomen.—Underside greenish yellow.

Length, 1¼ line.

The spots on the thighs of the ♂ are not so distinct as in the ♀.

We have taken this species in abundance by sweeping amongst short grass, &c., in a field at Eltham, in June. At Scarborough, amongst *Lithospermum officinale* and *arvense*, and on the flowers of *Echium vulgare*, in July (*Wilkinson*).

Family 12.—PSALLIDÆ.

Genus 1.—Plagiognathus, *Fieb.*

Longish, narrow, almost parallel.

Head almost vertical in front, 1½ time as broad across the eyes as long; *Crown* slightly convex, almost level with the upper margin of the eyes. *Clypeus* flattish, very much deflected; base level with the anterior margin of the eyes; apex projecting a little beyond and in a line with the middle of the eyes; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face* pointed; central lobe longish, convex, prominent; side lobes short, narrow, rounded outwardly. *Antennæ* shorter than the body; 1st joint shorter than the head, clavate; 2nd 3 times longer than the 1st, slightly thickened to the apex; 3rd and 4th filiform, 3rd ⅔rds the length of the 2nd, 4th ½ the length of the 3rd. *Eyes* large, prominent; viewed from above almost hemispherical, from the side short oval. *Rostrum* reaching to the 2nd abdominal segment; 1st joint reaching nearly to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, twice as broad across the posterior margin as long, with 2 more or less distinct callosities behind the indented anterior margin, angles rounded; sides straight; hinder angles somewhat acute; posterior margin straight, slightly rounded from the basal angles of the scutellum to the hinder angles; disk flattish convex, deflected to the head. *Scutellum* triangular, almost level with the clavus, with a transverse channel near the base; anterior portion convex, deflected to the transverse channel; hinder portion flattish convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, flattish convex; cuneus and membrane slightly deflected; *Cuneus* longish, triangular; base somewhat broad. *Sternum: Prosternum;* xyphus triangular, convex; *Mesosternum* convex, in the middle in front compressed into a small triangle, with a short oblique channel on each side; posterior margin almost straight, very slightly notched in the middle; *Metasternum* slightly convex, centre prominent and angular. *Legs; thighs* somewhat stout; 3rd pair flattened on the sides; *tarsi;* 2nd joint of the 3rd pair longer than the 3rd.

Species 1.—Plagiognathus viridulus.

Phytocoris viridulus, *Fall.* Hem. Succ. i, 105, 54 (1829).
Capsus — *Hahn.* Wanz. ii, 136, fig. 221 (1834); *Meyer*, Caps. 77, 51, tab. 7, fig. 2 (1843); *Sahlb.* Geoc. Fen. 103, 27 (1848); *Kirschb.* Caps. 98, 142 (1855).
— (Capsus) viridulus, *Flor*, Rhyn. Liv. i, 595, 76 (1860).
Plagiognathus — *Fieb.* Europ. Hem. 302, 4 (1861),

Greenish or grayish-green, thickly clothed with black hairs. *Corium;* anterior margin ciliate.

Head.—Antennæ yellowish; 1st joint at the base and before the apex with a narrow black ring, or the base only black, apex narrowly pale; 2nd narrowly black at the base. *Eyes* brown. *Rostrum* yellow, tip brown.

Thorax.—Elytra somewhat diaphanous; *Clavus;* apex very narrowly blackish; *Membrane* blackish, iridescent; between the apex of the cuneus and the inner cell-nerve a white, triangular patch, immediately below which is a somewhat square black patch, followed by a paler spot; under the apex of the inner cell-nerve a black spot, frequently continued into a short streak; inner marginal nerve piceous; cell-nerves whitish or yellowish; inner cell black. *Legs* greenish or yellowish; *thighs* underneath, with 3 longitudinal rows of black spots, largest on the 3rd pair; upperside next the apex irregularly spotted with black; *tibiæ* with large black spots, and stout, somewhat spinose, black hairs; knees and apex blackish or brown; *tarsi* and *claws* blackish.

Abdomen underneath yellowish, clothed with very short yellowish hairs.

Length, 2 lines.

Dr. Flor, in 'Rhyn. Liv.,' i, 596, states that "generally the upperside of the abdomen of the ♀ is black, but in the ♂, as a rule, and sometimes in the ♀, the entire abdomen and the underside of the sternum is brown or blackish; sometimes the head also is blackish," but we have not met with any examples wherein these exceptions occur. This species is very common amongst herbage and on plants by waysides, from June to September. It has occurred at Charlton, Sanderstead, Darenth, Mickleham, and Folkestone.

Species 2.—Plagiognathus arbustorum.

Capsus arbustorum, *Fab.* E. S. iv, 175, 141, (1794); S. R. 238, 174 (1803); *H. Schf.* Wanz. iii, 80, fig. 300 (1836); *Meyer*, Caps. 64, 33, tab. 3, fig. 1 (1843); *Sahlb.* Geoc. Fen. 115, 55 (1848); *Kirschb.* Caps. 99, 145 (1855).

Phytocoris arbustorum, *Fall.* Hem. Suec. i, 104, 52 (1829); *Zett.* Ins. Lap. 275, 25 (1839).

— lugubris, *Hahn*, Wanz. ii, 138, fig. 225 (1834).

Capsus brunnipennis, *Meyer*, Caps. 66, 35, tab. 3, fig. 3 (1843); *Kirschb.* Caps. 99, 144 (1855).

— hortensis, *Meyer*, Caps. 65, 34, tab. 3, fig. 2 (1843); *Kirschb.* Caps. 100, 146 (1855).

— (Capsus) arbustorum, *Flor*, Rhyn. Liv. i, 602, 81 (1860).

Plagiognathus — *Fieb.* Europ. Hem. 302, 1 (1861).

Black, brownish-yellow, or olive-green, thickly clothed with black hairs. *Corium;* anterior margin ciliate.

Head black; *Crown;* hinder margin with a transverse, yellowish streak. *Antennæ* clothed with very short black hairs; 1st and 2nd joints black; 3rd and 4th brownish, or pale brownish-yellow, base of the 3rd narrowly blackish. *Eyes* black. *Rostrum* black; apex of the 2nd joint yellowish.

Thorax.—Pronotum in front to behind the callosities in brownish-yellow examples black; in olive-green examples brown or brownish. *Scutellum;* hinder portion transversely wrinkled; in brownish-yellow examples black, basal angles yellowish or reddish-yellow; in olive-green examples frequently brown, basal angles yellowish. *Elytra: Clavus;* inner margin pitchy black; disk somewhat thickly covered with very minute brown punctures; *Corium;* anterior margin ciliate; in brownish-yellow examples broadly brown, broadest at the apex, within the base narrowly yellowish; in olive-green examples more or less narrowly piceous, within the base sometimes narrowly pale-yellowish; disk somewhat thickly covered with very minute brown punctures; *Cuneus* in brownish-yellow examples orange-yellow or reddish; anterior margin brownish; in olive-green examples yellowish-green; anterior margin piceous; *Membrane* blackish, iridescent; cells, especially the inner one, darker; outer cell-nerve towards the apex interiorly with a narrow black margin; between the apex of the cuneus and the inner cell-nerve a white, triangular patch, and

from the latter to the apex of the anterior margin a black streak, generally darkest at the base; inner marginal nerve piceous; cell-nerves yellowish, or brownish-yellow; apex and inner cell-nerve whitish or reddish. *Legs; coxæ* pale-yellowish, base blackish; *thighs* yellowish, upper and under margins black; upper side at the apex irregularly and underneath with a longitudinal row of large black spots; *tibiæ* yellowish, with large black spots, and longish, stout, somewhat spinose, black hairs; knees and apex blackish; *tarsi* and *claws* black.

Abdomen underneath olive-green, piceous or black.

Length, $1\frac{3}{4}$—2 lines.

A very abundant species in June and July, by sweeping amongst flowers, &c., on hedge-banks at Darenth, Mickleham, Bexley, and other places in the London district.

Genus 2.—APOCREMNUS, *Fieb.*

♂ elongate, somewhat parallel; ♀ oval.

Head almost vertical in front, $1\frac{1}{2}$ times as broad across the eyes as long; *Crown* almost flat, very much deflected; *Clypeus* almost flat, base lower than the anterior margin of the eyes; apex a little produced, almost in a line with the middle of the eyes; antenniferous processes short, placed near the lower margin of the eyes; *Face;* central lobe longish, convex, somewhat broad; side lobes short, narrow, rounded outwardly. *Antennæ* shorter than the body; 1st joint cylindrical, shorter than the head; 2nd 4 times as long as the 1st, in the ♂ stouter than in the ♀, gradually thickened to the apex; 3rd and 4th filiform, 3rd about $\frac{1}{2}$ the length of the 2nd, 4th $\frac{2}{3}$rds the length of the 3rd. *Eyes* large, somewhat prominent; viewed from above almost hemispherical; from the side, long oval. *Rostrum* slender, reaching to the 3rd pair of coxæ; 1st joint free.

Thorax.—Pronotum trapeziform, twice as broad across the posterior margin as long, with 2 callosities in front; anterior margin straight, angles rounded; sides straight; hinder angles short, rounded, slightly raised; posterior margin concave across the scutellum rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* triangular, almost equilateral, raised above the clavus, with a transverse channel near the base; anterior portion somewhat flat, deflected to the transverse channel; hinder

portion convex. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* convex, horizontal, as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* longish; base broad. *Sternum: Prosternum;* xyphus short, triangular, convex; base margined; apex rounded; *Mesosternum* short, horizontal, convex, with a central channel; posterior margin convex, slightly notched in the middle; in front somewhat compressed into a small triangle in the centre; *Metasternum;* centre convex, angle short. *Legs: thighs;* 3rd pair somewhat stout; *tarsi;* 2nd joint as long as the 3rd; 1st more than ½ the length of the 2nd.

Species 1.—APOCREMNUS AMBIGUUS.

PHYTOCORIS AMBIGUUS, *Fall.* Mon. Cim. 89, 64 (1807); Hem. Suec. i, 99, 14 (1829); *Zett.* Ins. Lap. 274, 17 (1839).
CAPSUS — *H. Schf.* Wanz. vi, 43, fig. 602 (1842); *Meyer,* Caps. 60, 27, (1843); *Sahlb.* Geoc. Fen. 114, 51 (1848); *Kirschb.* Caps. 94, 132 (1855).
— (CAPSUS) AMBIGUUS, *Flor,* Rhyn. Liv. i, 627, 100 (1860).
APOCREMNUS AMBIGUUS, *Fieb.* Europ. Hem. 304, 2 (1861).

♂ black or piceous; ♀ reddish or brownish-red, clothed with fine, short, depressed, golden-yellow hairs.

♂ *Head.—Crown;* hinder margin yellowish or brownish-yellow. *Antennæ* black; 4th joint brownish. *Eyes* black. *Rostrum* piceous.

Thorax; Elytra black or piceous, somewhat diaphanous; *Clavus;* inner margin in piceous examples, narrowly black; suture in black examples narrowly pale; *Corium;* anterior margin in piceous examples, broadly brown; extreme base yellowish or reddish-yellow; space between the 1st nerve and the anterior margin reddish-brown; in black examples the anterior margin darkest; space between the 1st nerve and the latter somewhat brownish; *Cuneus* reddish or brownish-red; base narrowly pale; *Membrane* blackish; iridescent; between the apex of the cuneus and the outer cell-nerve a white, triangular patch, below which is a large, black, triangular patch, extending to the apex of the anterior margin; inner marginal nerve black; cell-nerves brownish or yellowish; apex white; base of the outer cell, for a short distance, exteriorly margined with white; apex of the inner cell narrowly white. *Sternum* black.

Legs; coxæ black; apex reddish-yellow; *fulcra* reddish-yellow, apex exteriorly brownish; *thighs* black or pitchy brown, apex reddish or reddish-yellow; *tibiæ* yellowish, brownish, or reddish, apex narrowly black; with large black spots, and stout, erect, spinose, black hairs; *tarsi*; 1st and 3rd joints black; 2nd brown; *claws* black.

Length, 2½ lines.

♀ reddish or brownish-red, clothed with fine, short, depressed, golden-yellow hairs.

Head.—Crown; hinder margin yellowish; at the hinder margin of each eye a small black spot, and between the eyes 2 larger ones, frequently joined to the former, and continued into a broad streak extending to the apex of the clypeus; *Face;* apex of the central and side lobes black. *Antennæ* reddish or yellowish; 1st joint black at the base; 2nd at the base narrowly, and apex broadly, black; 3rd and 4th brownish-yellow, base of each narrowly black; or 3rd and 4th brown, 4th palest. *Eyes* black. *Rostrum* piceous.

Thorax.—Pronotum; callosities black; posterior margin more or less broadly black. *Elytra: Clavus;* base and apex of the inner margin black; *Corium* next the apex, between the 1st nerve and claval suture, with a large, triangular, brown patch; *Cuneus* red, base more or less broadly yellowish or whitish; *Membrane* as in the ♂; cell-nerves yellowish; cells yellowish; apex of the outer cell broadly, and the inner one black. *Sternum;* sides red; *Mesosternum;* outer margin frequently blackish; centre pitchy brown. *Legs; coxæ* and *fulcra* yellow, the latter brownish exteriorly; *thighs* red; 2nd and 3rd pairs with a longitudinal row of spots along the middle of the underside; *tibiæ* reddish or reddish-yellow; apex black; with large black spots, and stout, erect, spinose hairs; *tarsi* as in the ♂.

Abdomen; upperside brown; connexivum and genital segments red; underside red, clothed with short, golden-yellow hairs; base in the centre, brown.

Length, 2⅓ lines.

A common species on birch trees at Darenth and elsewhere, in June. Scarborough, (*Wilkinson*).

Species 2.—Apocremnus obscurus.

Capsus obscurus, *Kirschb.* Caps. 92, 128, & 162, 24 (1855) ♂.
— Betulæ, *Kirschb.* Caps. 94, 133, & 167, 27 (1855) ♀.

♂ pitchy brown. *Antennæ;* 1st and 2nd joints black. ♀ reddish, pale brownish, or yellowish-red. *Antennæ;* 1st joint black; 2nd yellow, apical 3rd black; both sexes clothed with fine, depressed, golden-yellow hairs.

♂, *Head* black. *Antennæ;* 1st and 2nd joints black; 3rd and 4th brownish, base of the 3rd narrowly yellowish. *Eyes* brownish-black. *Rostrum* brown, tip piceous.

Thorax.—Pronotum black. *Scutellum* black; finely wrinkled transversely; basal angles sometimes narrowly brownish-yellow. *Elytra* pitchy brown; *Clavus* very finely wrinkled transversely: base narrowly reddish or yellowish; *Corium;* anterior margin black, towards and at the apex frequently broadly reddish-brown, within the anterior margin at the base reddish or yellowish; disk very finely wrinkled transversely; *Cuneus* red-brown; base narrowly, towards the inner angle broadly, reddish-yellow; *Membrane* blackish, iridescent, with a pale curved patch below the cells; anterior margin narrowly black; between the apex of the cuneus and the inner cell-nerve a triangular whitish patch; inner marginal nerve pitchy brown; cell-nerves white or yellowish white, the outer one exteriorly margined with black; outer cell white, apex black; inner one black. *Sternum* grayish-brown. *Legs; coxæ* and *fulcra* pale grayish or yellowish-white; *thighs* black or pitchy black; apex of the 1st and 2nd pairs, and frequently the 3rd, pale brownish-yellow; *tibiæ* yellowish, with black spots, and short, stout, erect, spinose, black hairs; apex narrowly black; *tarsi* yellowish; 1st joint brown; 3rd and *claws* black.

Abdomen; upperside pitchy brown; underside brownish-black, sparingly clothed with short, golden-yellow hairs; genital segments clothed with fine golden-yellow hairs.

Length, 2 lines.

♀ reddish, pale brownish or yellowish-red, clothed with fine, depressed, golden-yellow hairs.

♀, *Head* reddish or brownish-yellow. *Antennæ* yellow; 1st joint black; 2nd yellow, apical 3rd black; 4th brownish. *Rostrum* brownish-yellow, tip piceous.

Thorax.—Pronotum reddish or brownish-red, sometimes brown; sides reddish. *Scutellum* brownish-yellow, finely wrinkled transversely, anterior portion in the centre, and apex brown; or reddish, with the extreme margin of the basal angles and apex brown. *Elytra; Clavus* yellowish-red; *Corium;* anterior margin red; disk pale reddish, space between the 1st nerve and the claval suture, with a faint blackish shade; 1st nerve and a line next the claval suture reddish; *Cuneus* red; base next the anterior angle narrowly pale; *Membrane* black, iridescent; between the apex of the cuneus and the inner cell-nerve, a triangular, whitish patch, and between the inner margin and the apex of the outer cell another larger one, generally continued into a broad, curved streak in the centre of the disk; inner marginal nerve blackish; cell-nerves orange-yellow, outer one exteriorly margined with black; inner cell black, outer one at the apex broadly blackish. *Sternum* brown, clothed with pale golden-yellow hairs. *Legs; coxæ* and *fulcra* pale yellowish, the former exteriorly brown; *thighs* pale reddish; *tibiæ* yellowish, base reddish, apex narrowly blackish; with small black spots, and short, stout, erect, spinose hairs; *tarsi* yellowish; 1st joint brownish; 3rd and *claws* black.

Abdomen; upperside pitchy brown; underside brown, clothed with short, fine, golden-yellow hairs; genital segments brownish-red.

Length, 2 lines.

This species bears a strong resemblance at first sight to *Sthenarus Rotermundi*, but its longer and different coloured antennæ and cuneus will at once separate it from that species. It appears to be intermediate between *A. ambiguus* and *A. variabilis*, but it is less than the former, and considerably larger than the latter. From *ambiguus* the ♂ may be distinguished by the pale 3rd and 4th joints of the antennæ, and the ♀ from the 1st joint being entirely black. In *A. variabilis* the antennæ are pale.

An abundant species in June, and beginning of July, at Eltham, on apple trees.

Species 3.—Apocremnus variabilis.

Phytocoris variabilis, *Fall.* Hem. Suec. i, 98, 43 (1829); *Hahn*, Wanz. ii, 137, fig. 224 (1834); *Zett.* Ins. Lap. 275, 23 (1839).

Capsus variabilis, *Meyer*, Caps. 68, 38, tab. 3, fig. 4 (1843); *Sahlb.* Geoc. Fen. 115, 54 (1848); *Kirschb.* Caps. 93, 129 (1855).

— (Capsus) variabilis, *Flor*, Rhyn. Liv. i, 592, 74 (1860).

Apocremnus variabilis, *Fieb.* Europ. Hem. 304, 4 (1861).

Pitchy brown, brownish-red, reddish-yellow or yellowish, clothed with short, depressed, golden-yellow hairs.

Head black. *Antennæ* yellow; 1st joint at the base narrowly black. *Rostrum* brownish or yellowish; tip piceous.

Thorax.—Pronotum black or brown-black. *Scutellum* black or brownish-black. *Elytra* pitchy brown, brownish-red, reddish-yellow, or yellowish; *Corium;* anterior margin, in pitchy-brown examples, broadly dark brown, widest next the apex, and with somewhat of a reddish tinge; between the 1st nerve and the anterior margin at the apex reddish; *Cuneus* reddish-black or brown, with a narrow, pale, triangular patch at the base; *Membrane* fuscous, iridescent, darkest from below the cells to the apex of the anterior margin; in the middle frequently an indistinct, pale, curved streak; between the apex of the cuneus and the cells a triangular, white patch; inner marginal nerve brown; cell-nerves brown; apex white; basal half of the outer cell white. *Sternum* pitchy brown or reddish-yellow. *Legs* blackish-brown, brown-red or reddish; *thighs*, in blackish brown examples, 1st pair broadly, 2nd and 3rd narrowly yellowish or reddish-yellow; *tibiæ* yellow, with black spots and short, black, erect, spinose hairs; *tarsi* yellowish; 1st joint, sometimes, and 3rd, brown; *claws* brownish-red.

Length, 1½ line.

A very abundant species at Darenth Wood and elsewhere, in June, on oaks, &c.

Species 4.—Apocremnus Quercus.

Capsus Quercus, *Kirschb.* Caps. 93, 130 & 163, 25 (1855).
Apocremnus Quercus, *Fieb.* Europ. Hem. 304, 3 (1861).

Brownish or reddish-brown, clothed with short, depressed white hairs.

Head reddish-brown. *Antennæ* yellow, clothed with short, white hairs; 1st joint sometimes reddish-yellow, with a minute black spot on the upperside before the apex; apical half of the 2nd frequently reddish-yellow; 3rd and 4th pale brownish-yellow. *Rostrum* reddish-brown, tip darker.

Thorax.—Pronotum reddish-black or reddish-brown, palest towards and at the hinder angles; disk very finely wrinkled transversely. *Scutellum* reddish-black or reddish-brown, finely wrinkled transversely. *Elytra* somewhat diaphanous; *Clavus* pale brownish-red; apex narrowly blackish; nerve reddish, inner margin of the latter and the suture pale; disk very finely wrinkled transversely; *Corium;* anterior margin pale reddish-yellow, next the apex reddish; disk finely wrinkled transversely, brownish-red, base and posterior inner angle paler; *Cuneus* brown-red, base narrowly margined with white; extreme apex red; *Membrane* fuscous, iridescent, blackish along the anterior margin; inner marginal nerve brown; cell-nerves, a narrow line below the inner margin of the cuneus, and a short streak below the apex of the inner cell-nerve white; inner cell black; apex of the outer cell blackish. *Sternum: Prosternum;* xyphus yellowish, with a narrow, red, central line; *Mesosternum;* sides reddish; centre brown-red; *Metasternum* somewhat yellowish. *Legs; coxæ* and *fulcra* yellowish-white; *thighs;* 1st and 2nd pairs reddish-brown, apex narrowly reddish; 3rd red; extreme base and a narrow, transverse, diagonal streak before the apex, brown; *tibiæ* yellowish, with large, brown-black spots and short, black, spinose hairs; apex narrowly black; 3rd pair broadly brownish at the base; *tarsi* yellow; 1st joint at the base and 3rd blackish; *claws* brown.

Abdomen underneath brown-red, clothed with fine, short, whitish hairs.

Length, $1\frac{3}{4}$ line.

This insect bears a strong resemblance to *A. variabilis*, but it is larger, has redder thighs, and is clothed with white hairs.

We have only seen a few examples of this species taken at Darenth Wood, on oaks, in June.

Species 5.—Apocremnus similimus.

Capsus (Capsus) similimus, *Kirschb.* Caps. 93, 131 & 165, 26 (1855).
Apocremnus — *Fieb.* Europ. Hem. 304, 5 (1861).

Dusky-yellowish with a reddish tinge, clothed with fine, depressed, yellowish-white hairs, somewhat disposed in irregular patches.

Head.—Antennæ yellowish or pale reddish-yellow. *Rostrum* brownish-yellow; 1st joint reddish; tip piceous.

Thorax.—Pronotum very finely wrinkled transversely; sides somewhat ciliate. *Scutellum* grayish-yellow or yellowish-red. *Elytra; Clavus* dusky yellowish, with a reddish tinge, generally reddish along the nerve; *Corium;* anterior margin and along the 1st nerve, especially towards the apex, more or less broadly red; *Cuneus* red, the base more or less broadly dusky yellow; *Membrane* blackish, iridescent, the disk broadly pale below the cells; between the apex of the cuneus and the inner cell-nerve a white patch; outer cell-nerve blackish; apex and inner one red, or orange-yellow. *Legs; thighs* red, orange-red, or orange-yellow; apex narrowly yellowish; 3rd pair with 1 or 2 black spots on the upper margin before the apex; *tibiæ* with blackish or brownish-red spots and longish, erect, somewhat spinose, black hairs; apex narrowly brownish; *tarsi* yellowish; apex of the 3rd joint and *claws* brownish.

Length, 1¾ line.

This species bears a strong resemblance to *A. Quercus*. We took several specimens near Mickleham, in June and July, on, we believe, *Acer campestre*.

Genus 3.—Psallus, *Fieb.*

Short, oval.

Head almost vertical in front, broader across the eyes than long; hinder margin not keeled; *Crown* flattish convex, deflected to the base of the clypeus, which is almost in a line with the anterior margin of the eyes; *Clypeus* convex; apex slightly produced, in a

line with the middle of the eyes; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central lobe longish, convex; side lobes short, narrow. *Antennæ* shorter than the body; 1st joint stout, shorter than the head; 2nd 3½ to 4 times as long as the 1st, in the ♂ stouter than the ♀, and very slightly thickened to the apex; ♀ slightly clavate; 3rd and 4th filiform, 3rd ⅔rds the length of the 2nd, 4th ⅔rds the length of the 3rd. *Eyes* large, viewed from above somewhat hemispherical, from the side oval. *Rostrum* reaching beyond the 3rd pair of coxæ; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, twice as broad across the posterior margin as long, with 2 more or less distinct callosities in front; anterior margin straight, very slightly indented in the middle, angles rounded; sides convex; hinder angles short, somewhat obtuse; posterior margin straight; disk convex, deflected to the head. *Scutellum* convex, triangular, almost equilateral, level with or slightly raised above the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex; horizontal as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* triangular. *Sternum: Prosternum;* xyphus short, triangular, sides convex; *Mesosternum* convex, shortened posteriorly, posterior margin convex, slightly notched in the middle; *Metasternum* in the middle short angled, margin somewhat raised. *Legs: thighs;* 3rd pair stout; *tarsi* slender; 2nd joint longer than the 3rd.

Species 1.—PSALLUS SALICELLUS.

CAPSUS SALICELLUS, *Meyer,* Caps. 74, 47 (1843); *H. Schf.* Wanz. vi, 47, fig. 605 (1842).
— (CAPSUS) SALICELLUS, *Flor,* Rhyn. Liv. i, 590, 72 (1860).
PSALLUS SALICELLUS, *Fieb.* Europ. Hem. 305, 1 (1861).

Grayish-yellow, generally with a reddish tinge, clothed with fine, short, depressed, silver-white hairs, somewhat disposed in irregular patches. *Elytra* thickly and irregularly spotted with brown, leaving the intermediate spaces of a somewhat round form. *Thighs;* 3rd pair broadly brown at the apex.

Head.—Antennæ yellowish; 1st joint at the base and before the

apex with a narrow brownish-black ring. *Rostrum* pale yellowish, tip brown.

Thorax.—Pronotum frequently with brown spots on the sides towards the hinder angles. *Scutellum* unspotted at the base. *Elytra; Clavus* grayish-yellow, irregularly spotted with brown; *Corium* thickly and irregularly spotted with brown; the intermediate spaces of a somewhat round form; *Cuneus* pale grayish-white; inner margin in the middle narrowly red; *Membrane* pale brownish, iridescent; below the cells, and next the anterior margin a large, whitish patch, divided by a broad, somewhat curved, transverse brown-black streak immediately below the apex of the cuneus; cell-nerves white, basal half of the outer one generally brownish; cells at the apex brown black. *Legs* pale yellowish-white; *thighs* with brown spots at the apex; 3rd pair broadly brown; *tibiæ* with black-brown spots set in pairs, and longish, erect, somewhat spinose black hairs; *tarsi* yellowish; 3rd joint at the apex, and *claws*, brown.

Abdomen; underside grayish-white; sides with brownish spots.

Length, 1¾ line.

Not uncommon by beating nut bushes, in August and September, at Wickham, Darenth Wood, and Tunbridge Wells.

Species 2.—Psallus Querceti.

Phytocoris Querceti, *Fall.* Hem. Suec. i, 102, 49 (1829).
Capsus sanguineus, *Kirschb.* Caps. 97, 140 (1855).
Psallus Querceti, *Fieb.* Europ. Hem. 305, 2 (1861).

Grayish or greenish-white, clothed with fine depressed, yellowish hairs, sparingly intermixed with black ones. *Elytra* more or less spotted with red.

Head.—Antennæ pale yellowish-white; 1st joint before the apex on the inside with a brown spot, in which is set a stout, erect, black hair. *Rostrum* yellowish, tip blackish.

Thorax.—Pronotum with a few scattered red spots in front, and a row consisting of 4 to 6 spots across the centre of the disk, sometimes obsolete. *Scutellum* more or less spotted with red at the base. *Elytra; Clavus* more or less spotted with red; *Corium* more or less spotted with red, frequently towards and at the apex between the 1st nerve and claval suture reddish, the colouring between the

2nd nerve and the claval suture frequently extending nearly to the base; *Cuneus* pale grayish-white; *Membrane* fuscous, iridescent; below the cells, and next the anterior margin a large whitish patch divided by a narrow, transverse, brownish-black streak immediately below the apex of the cuneus; below the apex of the cells a brownish-black spot generally joined to the transverse streak; cell-nerves whitish; apex of both cells more or less broadly brownish-black. *Legs* yellowish-white; *thighs* spotted with brown towards the apex; 3rd pair on the underside frequently with 3 short rows; on the upper margin, near the apex, a large brown-black spot, sometimes divided, in which is set an erect, black, spinose hair; *tibiæ* whitish; basal half with brown spots; the erect, somewhat spinose hairs black; *tarsi* yellowish; 3rd joint at the apex, and *claws*, brown.

Abdomen; underside white, clothed with yellow hairs; genital segments red, or orange-red.

Length, 1½ line.

Common on dwarf sallows at Deal, in August.

Species 3.—PSALLUS SANGUINEUS.

LYGÆUS SANGUINEUS, *Fab.* E. S. iv, 175, 144 (1794); S. R. 238, 179 (1803).
PHYTOCORIS — *Fall.* Hem. Suec. i, 102, 48 (1829).
CAPSUS — *H. Schf.* Nom. Ent. i, 51 (1835); Wanz. iii, 70, 268 (1836); *Meyer*, Caps. 75, 49 (1843); *Sahlb.* Geoc. Fen. 107, 36 (1848).
— (CAPSUS) SANGUINEUS, *Flor*, Rhyn. Liv. i, 588, 71 (1860).
PSALLUS SANGUINEUS, *Fieb.* Europ. Hem. 305, 3 (1861).

Rosy, clothed with fine, depressed, yellow hairs, disposed in somewhat irregular patches and sparingly intermixed with somewhat erect, black ones; *Cuneus* pale grayish-white.

Head.—Antennæ yellow, 1st joint at the base and before the apex with a blackish ring. *Rostrum* yellow, tip blackish.

Thorax—Pronotum in front to behind the callosities frequently yellowish. *Scutellum;* apex yellowish-white. *Elytra: Clavus;* nerve very narrowly margined with yellowish; *Corium;* nerves very narrowly margined with yellowish; *Cuneus* pale grayish-white; *Membrane* fuscous brown, iridescent; below the cells, and next the anterior margin, a large whitish patch, divided by a short,

narrow, slightly curved, transverse blackish streak immediately below the apex of the cuneus, frequently joined to a short, narrow, longitudinal, blackish streak below the apex of the cells; cell-nerves whitish; apex of both cells more or less broadly blackish. *Legs* yellowish-white; *thighs* more or less spotted with brown towards the apex, especially on the underside; 3rd pair generally reddish; on their upper margin, before the apex, a large black spot frequently divided, in which is set a stout, somewhat spinose, black hair; *tibiæ* whitish, with brown spots, and longish, erect, somewhat spinose, black hairs; *tarsi* yellowish-white; 3rd joint at the apex, and *claws*, brownish.

Abdomen; underside white; sides red, somewhat spotted with white; genital segments red.

Length, $1\frac{1}{2}$—$1\frac{3}{4}$ line.

Not common. At Deal, by beating dwarf sallows, in August, in company with *P. Querceti*.

Species 4.—Psallus Alni.

Carmine-red, thickly clothed with longish, golden-yellow hairs, somewhat disposed in irregular patches. *Pronotum* with 2 transverse rows of minute black spots. *Cuneus* carmine-red.

Head.—Antennæ brownish-yellow; 1st joint reddish-brown. *Rostrum* brownish-yellow; tip brown.

Thorax.—Pronotum with a transverse row of minute black spots across the centre of the disk, and another across the posterior margin of the callosities. *Scutellum;* apex generally brownish. *Elytra: Clavus;* apex narrowly blackish; *Cuneus* carmine-red; base next the anterior margin narrowly white; *Membrane* blackish; between the apex of the cuneus and the cells a triangular white patch, immediately followed by a transverse black streak; below the latter and extending from the anterior margin to beyond the middle of the disk a whitish patch; cell-nerves reddish; cells pale, apex blackish. *Sternum* carmine-red; *Mesosternum;* anterior margin narrowly, and centre broadly, brownish-black. *Legs* red; *thighs* spotted with black towards the apex; *tibiæ* with black spots, and longish, erect, somewhat spinose, black hairs; *tarsi* brownish-yellow; 3rd joint and *claws* brown.

Abdomen piceous-red, genital segments carmine-red.

Length, 1½ line nearly.

Closely allied to *P. salicis*, but smaller, and distinguished from that species by the absence of the white apex of the cuneus. Not uncommon by beating alders at Lewisham, in September.

Species 5.—PSALLUS SALICIS.

CAPSUS SALICIS, *Kirschb.* Caps. 97, 139 & 174, 30 (1855).
PSALLUS SALICIS, *Fieb.* Europ. Hem. 307, 6 (1861).

Carmine-red, clothed with fine, depressed, golden-yellow hairs, sparingly intermixed with black ones.

Head.—Crown between the eyes with a transverse row of minute blackish-brown spots. *Antennæ* yellowish; 1st joint with 1 or 2 minute black spots towards the apex, in each of which is set a short, stout, black hair. *Rostrum* reddish-brown; 1st joint red; tip black.

Thorax.—Pronotum with several minute brown spots irregularly disposed over the disk. *Scutellum* carmine-red. *Elytra: Clavus;* inner margin at the apex narrowly brownish; *Cuneus;* base and apex narrowly white; *Membrane* blackish, iridescent; between the apex of the cuneus and the cell-nerves a whitish streak, and in the centre of the disk, below the cells, a pale patch; inner marginal nerve brownish; cell-nerves reddish-yellow, the outer one exteriorly narrowly margined with white; outer cell broadly pale at the base. *Sternum* carmine-red. *Legs* whitish; *thighs* somewhat thickly spotted with black; on the upper margin before the apex, a large black spot, in which is set a stout, erect, spinose, black hair; *tibiæ* reddish-yellow, paler towards the apex, with large, black spots, and stout, erect, spinose, black hairs; apex narrowly brownish; *tarsi* yellow; 3rd joint and *claws* blackish.

Abdomen underneath red, the segments more or less broadly brown; *connexivum* and genital segments red.

Length, 1¾ line.

Dr. Fieber named the insects from which the description has been made, but we cannot observe the 2 transverse rows of spots on the head, and the one generally on the hinder margin of the pronotum, which he points out in his diagnosis.

Not uncommon at Newport, South Wales; Croydon; and Cobham Park, on ash trees, in June and July.

Species 6.—Psallus lepidus.

Psallus lepidus, *Fieb.* Wien. Ent. Monats. ii, 337, 25 (1858); Europ. Hem. 305, 7 (1861).

Brownish-red, clothed with fine, depressed, golden-yellow hairs, intermixed with black ones.

Head dusky-yellowish or yellowish-white; *Crown* with a transverse row of minute brownish-black spots between the eyes. *Antennæ* yellowish; 3rd and 4th joints darker; *Rostrum* yellowish, 4th joint brown.

Thorax.—Pronotum in front sometimes dusky yellowish-white, posteriorly blackish, or entirely blackish, except the callosities, which are then yellowish-white. *Scutellum* blackish-red, sometimes greenish-red, basal angles red; apex narrowly whitish. *Elytra; Clavus* yellowish; disk with 2 or 3 longitudinal rows of red spots of irregular size; apex brown-red; *Corium;* anterior margin at the apex brownish-black; disk brownish-red, the colour becoming darker as it approaches the apex; extreme base and the nerves narrowly yellowish, the former with 1 or 2 red spots; *Cuneus* brownish-red; apex red; base narrowly dusky yellow; *Membrane* brownish; between the apex of the cuneus and the inner cell-nerve a whitish, somewhat triangular, patch, followed by a lunate black patch, below which is an almost round yellowish spot, joined to a transverse streak of the same colour, extending for more than half-way across the disk; outer cell narrowly margined with yellowish; cell-nerves reddish; cells yellowish, apex blackish. *Legs* yellowish or reddish-yellow; *thighs* thickly spotted with black towards the apex; 3rd pair on the upperside generally with 4 or 5 black spots; *tibiæ* yellowish, frequently reddish at the base, with black spots, and long, erect, somewhat spinose, black hairs; *tarsi* yellowish; apex of the 3rd joint and *claws* brownish.

Length, 1¼ line.

Dr. Fieber has seen and determined this species to be the *P. lepidus* of his work. It is abundant on ash trees, at Croydon, in June and July.

Species 7.—PSALLUS DILUTUS.

PSALLUS DILUTUS (*Meyer*), Wien. Ent. Monats. ii, 338, 28 (1858); *Fieb.* Europ. Hem. 305, 10 (1861).

Very pale whitish-yellow, clothed with depressed, white hairs, intermixed with somewhat erect, black ones.

Head yellowish. *Antennæ* yellowish. *Rostrum* yellowish; tip brown.

Thorax.—Pronotum in front yellowish. *Elytra; Membrane* pale fuscous; a little below the apex of the cuneus a transverse brown streak, sometimes interrupted, extending from in a line with the apex of the outer cell to the anterior margin; the latter narrowly brown; cell-nerves whitish; cells yellowish; apex of the outer broadly and the inner entirely blackish. *Legs; thighs* very pale whitish-yellow; apex yellowish, spotted with black on the upper and undersides, the upper margin with 3 or 4 black spots; *tibiæ* with black spots, and long, erect, somewhat spinose, black hairs; *tarsi* yellowish; apex of the 3rd joint, and *claws*, brown.

Abdomen underneath yellowish, with minute blackish spots along the margin.

Length, 1¾—2 lines.

We have only seen 2 examples, taken near Cobham Wood, in July, and supposed to have been beaten from oaks.

Species 8.—PSALLUS ROSEUS.

LYGÆUS ROSEUS, *Fab.* S. R. 238, 178 (1803).
PHYTOCORIS ROSEUS, *Fall.* Hem. Suec. i, 101, 47 (1829); *Zett.* Ins. Lap. 275, 26 (1839).
CAPSUS — *H. Schf.* Nom. Ent. i. 49 (1835); Wanz. iii, 71, fig. 287 (1836); *Meyer*, Caps. 67, 37 (1843); *Sahlb.* Geoc. Fen. 107, 35 (1848); *Kirschb.* Caps. 96, 135 (1855)?
— (CAPSUS) ROSEUS, *Flor*, Rhyn. Liv. i, 591, 73 (1860).
PSALLUS ROSEUS, *Fieb.* Europ. Hem. 305, 12 (1861).

Red, ochreous-red, or reddish-yellow, clothed with fine, depressed, golden-yellow hairs.

Head yellowish. *Antennæ* yellowish. *Rostrum* yellowish; tip piceous.

Thorax.—Pronotum entirely, or the anterior portion to behind the callosities, yellowish, or ochreous yellow. *Scutellum* anteriorly, as far as the transverse channel, reddish-yellow; posterior portion yellowish, or brownish-yellow. *Elytra; Clavus* ochreous-red, or reddish-yellow, or yellowish with several red spots more or less confluent; *Corium* ciliate; ochreous-red or reddish-yellow, the colour gradually becoming dark red as it approaches the apex, or the entire disk red; posterior margin very narrowly white; *Cuneus* red; base next the anterior margin and apex narrowly white; *Membrane* blackish, iridescent; between the apex of the cuneus and the inner cell-nerve a triangular whitish patch, below which is a somewhat W-shaped black streak; cell-nerves reddish-yellow; apex of both cells black. *Legs;* yellowish; *thighs* next the apex frequently reddish-yellow, and with a few brown spots; *tibiæ* with black spots, and longish, erect, somewhat spinose, black hairs; apex narrowly brownish; *tarsi* pale brownish-yellow; 3rd joint and *claws* brown.

Length, 1¾ line.

Not very common. Taken at Dartford and Mickleham, in July, by beating *Acer campestre?*

Species 9.—Psallus varians.

Capsus varians, *H. Schf.* Wanz. vi, 45, fig. 603 (1841).
— — *Meyer*, Cap. 39 (1843).
Psallus — *Fieb.* Europ. Hem. 309, 14 (1861).

Reddish-yellow or yellowish-white, clothed with fine, depressed, golden-yellow hairs, intermixed with black ones.

Head, pale reddish-yellow; *Crown* with a whitish central line. *Antennæ* yellowish; 1st joint generally blackish at the base. *Eyes* brownish-black. *Rostrum* pale brownish-yellow; tip black.

Thorax.—Pronotum pale yellowish-white, or reddish; the anterior margin, sides, and a central line pale yellowish-white. *Scutellum* red; a central line extending from the transverse channel to the apex, and frequently the sides pale yellowish-white; in yellowish-white examples the basal portion orange-yellow, and 4 black spots along the anterior margin. *Elytra* somewhat diaphanous; *Clavus;* inner margin yellowish; disk very pale yellowish; *Corium;* anterior

margin yellowish; disk, next the base broadly pale yellowish, next the apex, especially between the 1st nerve and the claval suture, more or less broadly red; inner margin between the apex of the clavus and the cuneus narrowly white; in yellowish-white examples the apex of the anterior margin is somewhat reddish-brown, and between the 1st nerve and the claval suture, a large, somewhat triangular, brownish patch; *Cuneus* reddish or orange yellow, the base broadly, apex and margins frequently, whitish; *Membrane* pale fuscous, iridescent; between the apex of the cuneus and the inner cell-nerve, a pale, triangular patch; anterior margin narrowly, a transverse curved streak below the pale patch, a streak below the apex of the cells and the exterior margin of the latter, blackish; inner marginal nerve brownish; cell-nerves pale yellowish, or whitish; apex of both cells blackish. *Sternum* reddish or reddish-orange; *Mesosternum;* sides narrowly yellowish-white. *Legs* pale yellowish-white; *thighs;* 1st pair underneath, sometimes with a short, red streak at the apex; 3rd broadly orange-yellow or red at the apex; all the pairs spotted with brown, the spots on the 3rd pair frequently almost forming rings; *tibiæ* with black spots, and long, somewhat spinose, black hairs; apex narrowly brownish; *tarsi* yellow; 3rd joint and *claws* brown.

Abdomen underneath reddish, clothed with fine, short, golden-yellow hairs; base in the centre yellowish-white.

Length, $1\frac{3}{4}$—2 lines.

Yellowish-white examples are the variety *P. insignis* of Fieber. Abundant on birches at Darenth and elsewhere, in the London district, in June.

Species 10.—PSALLUS DISTINCTUS.

PSALLUS DISTINCTUS, *Fieb.* Wien. Ent. Monats. ii, 337, 26 (1858); Europ. Hem. 305, 15 (1861).

Pale orange-yellowish, clothed with fine, depressed, whitish-yellow hairs.

Head.—Crown; posterior margin pale yellowish-white. *Antennæ* yellow; 1st joint with a very narrow, black ring in the middle. *Rostrum* yellowish; 4th joint brown.

Thorax.—Pronotum anteriorly, sides narrowly, and a fine central line, pale yellowish-white. *Scutellum* orange-red; sides, from the

transverse channel, and a narrow central line, whitish. *Elytra; Clavus* orange-yellowish, paler next the suture; *Corium* red, darkest next the apex; base orange-yellowish; posterior margin very narrowly white; *Cuneus* red, at the base a lunate white patch; anterior margin very narrowly orange-yellow; apex white; *Membrane* brownish-black; between the apex of the cuneus and the inner cell-nerve, a whitish patch, in which is a blackish spot a little below the cell; cell-nerves white; inner cell black. *Legs* pale yellowish-white; *thighs* towards the apex thickly spotted with brown-black, in somewhat irregular transverse rows; apex of the 3rd pair orange-red; *tibiæ* with brown spots, and long, erect, somewhat spinose, black hairs; *tarsi* pale yellowish; 3rd joint at the apex, and *claws*, brownish.

Length, $1\frac{3}{4}$ line.

Very scarce. Between Leatherhead and Mickleham, in July. Beaten from oaks.

Species 11.—Psallus Fieberi.

Short; sub-elliptic. Ochreous-yellow; thickly clothed with short, white hairs.

Head.—Crown; transverse keel indistinct. *Eyes* black. *Rostrum* ochreous yellow, tip piceous.

Thorax.—Pronotum with 2 callosities behind the anterior margin, frequently joined together, and appearing as one; hinder angles very slightly raised; posterior margin convex, indented in the middle. *Scutellum* flattish, nearly level with the clavus. *Clavus* convex; *Corium* somewhat diaphanous; disk very pale ochreous-yellow; nerves and inner angle alone darker; *Cuneus* deep ochreous-yellow; base rather broadly pale; *Membrane* very pale, iridescent; inner margin pale; cell-nerves ochreous-yellow. *Legs* ochreous-yellow; *tibiæ* pale yellowish, with long, black, spinose hairs; apex sometimes very narrowly brownish; *tarsi* pale brownish-yellow, or yellowish; apex of the 3rd joint, and *claws*, piceous.

Abdomen entirely ochreous-yellow.

Length, $1\frac{1}{4}$—$1\frac{1}{2}$ line.

Plentiful at Croydon and Shirley, in June and July on palings.

Dr. Fieber, after whom we have the pleasure of naming the species, did not know it, nor does it appear to have been observed on the Continent.

Genus 4.—STHENARUS, *Fieb.*

Short, somewhat broad, oval.

Head almost vertical in front, 2½ times as broad across the eyes as long, and with a transverse keel behind the latter; *Crown* very slightly convex, deflected to the base of the clypeus, which is almost in a line with the anterior margin of the eyes; *Clypeus* convex; apex a little produced, almost in a line with the middle of the eyes; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face;* central lobe convex, somewhat long; side lobes short, broad, rounded outwardly. *Antennæ* short; 1st joint stout, shorter than the head; 2nd, 3½ times as long as the 1st; in the ♂ stouter than in the ♀, and gradually thickened to the apex; ♀ somewhat clavate; 3rd and 4th filiform, together ⅘ths the length of the 2nd, 4th, ⅔rds the longth of the 3rd. *Eyes* large; viewed from above somewhat hemispherical, from the side, long oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint stout.

Thorax.—Pronotum short, trapezoidal, twice as broad across the posterior margin as long, and with 2 callosities in front; anterior margin straight, angles rounded; sides straight; hinder angles short, rounded; posterior margin almost straight, rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* triangular, level with the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* flattish convex, deflected to the corium; *Corium* flattish convex, horizontal as far as the cuneus and membrane, which are deflected; base somewhat flat; *Cuneus* triangular, broad at the base. *Sternum: Prosternum;* xyphus short, triangular, convex, margined in front; *Mesosternum* convex, elevated posteriorly, and with a central channel; posterior margin somewhat convex; *Metasternum;* centre obtuse, prominent, slightly convex, raised into a callosity in the middle. *Legs: thighs;* 3rd pair very stout; *tarsi* stout, 3rd joint longest.

Species 1.—Sthenarus Rotermundi.

Capsus Rotermundi, *Scholtz*, Arb. und Veränd. sp. 42 (1846).
— (Capsus) Rotermundi, *Flor*, Rhyn. Liv. i, 594, 75 (1860).
Sthenarus Rotermundi, *Fieb.* Europ. Hem. 310, 2 (1861).

Gray or gray-greenish, thickly clothed with fine, depressed, silver white hairs.

Head yellowish; *Crown* with a small black spot on each side of the centre, between the eyes, or with a broad, dark-brown streak extending to the apex of the clypeus; *Face;* central and side lobes black. *Antennæ* yellowish or pale brownish-yellow. *Eyes* black. *Rostrum* brownish; 4th joint piceous, pale at the base.

Thorax.—Pronotum gray-yellowish or gray-greenish, with a black or brown streak on the callosities; sides narrowly pale or dark gray; anterior margin broadly yellowish; across the callosities a broad black streak generally divided in the centre by a short narrow yellowish line. *Scutellum;* anterior portion dark gray; basal angles narrowly brownish-yellow; hinder portion yellowish. *Elytra: Clavus;* inner margin and suture, except the base of the latter, narrowly black; apex narrowly dark gray; disk generally pale brownish-yellow; *Corium;* anterior margin at the apex dark gray; disk pale grayish-yellow, 1st nerve reddish; near the claval suture a short pale streak about midway between the apex and a line drawn to the scutellar angle; or the 1st nerve broadly pale, with a broad streak on either side, and a large, triangular patch at the inner posterior angle, dark gray; *Cuneus* bright red, base more or less broadly white; *Membrane* dark gray, iridescent; below the apex of the cuneus a roundish white spot, and below the apex of the outer cell a short blackish streak; inner marginal nerve brown; cell-nerves white; apical half of the outer cell and the inner one blackish. *Sternum; Prosternum* yellowish; *Mesosternum;* sides reddish or reddish-yellow; centre black; *Metasternum* yellowish. *Legs* whitish or pale yellowish-white; *thighs* frequently reddish on the underside; 1st and 2nd pairs with 1 row, 3rd with 2 rows of brown spots on the underside; upper margin with 2 brown spots, one a little before and the other at the apex, in each of which, in the 1st and 2nd pairs is set a single, stout, erect, spinose hair; 3rd pair with 2 hairs in each; *tibiæ*

whitish; base red; apex narrowly black, with large brown spots and longish, stout, erect, spinose, black hairs; *tarsi;* 1st joint piceous; 2nd pale; 3rd and *claws* black,

Abdomen; upperside brownish-yellow, piceous or blackish in the middle; margin of the connexivum more or less, and genital segments bright red; underside yellowish, clothed with fine, silver-white hairs; centre, connexivum, and genital segments bright-red.

Length, 1½ line.

A common species on white poplars, at Blackheath, in the beginning of July.

Family 13.—CAPSIDÆ.

Genus 1.—Neocoris.*

Short, suboval.

Head large, almost vertical in front, twice as broad across the eyes as long; *Crown* slightly convex, almost level with the upper margin of the eyes; *Clypeus* slightly convex, very much deflected; base a little in front of the eyes; apex projecting a little beyond, and in a line with the middle of the eyes; antenniferous processes short, in a line with the middle of the lower half of the eyes; *Face* pointed, central lobe longish, convex, prominent; side lobes short, stout, rounded outwardly. *Antennæ* shorter than the body; 1st joint shorter than the head, clavate; 2nd, 3 times the length of the 1st, slightly thickened to the apex; 3rd and 4th filiform, 3rd ⅔rds the length of the 2nd, 4th about ½ as long as the 3rd. *Eyes* very large, prominent; viewed from above almost spherical, from the side, short oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint stout, reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, almost twice as broad across the posterior margin as long, with 2 callosities in front; anterior margin straight, angles rounded; sides straight; hinder angles acute; posterior margin almost straight; disk flattish convex, slightly deflected to the head. *Scutellum* triangular; almost equilateral, level with the clavus, with a transverse channel near the

* Νέος, new, κόρις, a bug.

base; sides slightly convex; disk flattish. *Elytra* a little longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal, flattish convex; cuneus and membrane slightly deflected; *Cuneus* longish, triangular, broad at the base. *Sternum: Prosternum;* xyphus triangular, convex; *Mesosternum* convex in front, compressed into a small triangle, with a short oblique channel on each side; posterior margin almost straight, faintly notched in the middle; *Metasternum* slightly convex; centre prominent and angular. *Legs; thighs* somewhat stout; 3rd pair flattened on the sides; *tarsi;* 2nd and 3rd joints of the 3rd pair almost of equal length.

Species 1.—Neocoris Bohemanni.

Phytocoris Bohemanni, *Fall.* Hem. Suec. i, 106, 58 (1829); *Zetl.* Ins. Lap. 276, 28 (1839).
— ruficollis, *Fall.* Hem. Suec. i, 107, 60 (1829).
Capsus furcatus, *H. Schf.* Wanz. iv, 79, figs. 408 and 409 (1839); *Meyer,* Caps. 70, 41 (1843); *Kirschb.* Caps. 95, 134 (1855).
— (Capsus) Bohemanni, *Flor,* Rhyn. Liv. i, 625, 99 (1860).
Plagiognathus — *Fieb.* Europ. Hem. 303, 5 (1861).

Black or brown, shining, clothed with very short, yellow hairs.

Head.—Crown; hinder margin generally, and a streak along the inside of each eye, whitish or reddish-white. *Antennæ;* 1st and 2nd joints black, apex of the 1st narrowly white; 3rd and 4th blackish or brownish. *Rostrum* brownish; 1st and 4th joints piceous

Thorax.—Pronotum very finely wrinkled transversely, and with a small fovea on each side of the centre, between the callosities; disk frequently with a pale yellow or reddish-yellow central line. *Scutellum;* basal angles red; basal portion flattish, somewhat depressed in the middle, almost in the same plane with the hinder portion; the latter very finely wrinkled transversely, sometimes with a reddish or whitish central line. *Elytra: Clavus;* inner margin narrowly black; suture at the base, as far as in a line with the scutellar angle, pale; disk black or pitchy brown, rather coarsely wrinkled transversely; *Corium* black or pitchy brown, very thickly and minutely punctured; at the base a large triangular pale patch, continued into a narrow streak for some distance along the claval suture and the outside of the 1st nerve; extreme base some-

times yellowish; *Cuneus* black or brown, base more or less pale; *Membrane* brownish or pale, slightly iridescent; cell-nerves whitish, inner cell and the exterior margin of the outer cell narrowly brown. *Sternum* black. *Legs; coxæ* pale yellowish, more or less black at the base; *fulcra* pale yellowish; *thighs* black or pitchy brown, extreme base sometimes and apex yellowish; underneath with a longitudinal row of spots; *tibiæ* yellow, with large black spots, in each of which is set a longish, stout, somewhat spinose, black hair; *tarsi* yellowish; 3rd joint and *claws* brownish.

Abdomen black, shining.

Length, 1½—1¾ line.

Variety Capsus furcatus, *H. Schf.* Wanz. iv, 79, fig. 409.

Head as in *Bohemanni.*

Thorax.—Pronotum in front red to behind the callosities; sides brownish; disk in the centre with a pale longitudinal line. *Scutellum;* anterior portion red or reddish, basal angles a little paler; hinder portion black or brown, with a broad reddish or yellowish central line. *Elytra* somewhat diaphanous; *Clavus;* inner margin narrowly black; suture pale; disk, from the base to beyond the scutellar angle, pale; apex piceous, with a pale spot in the middle; *Corium* at the base with a large, pale, triangular patch, continued into a broad streak next to and throughout the entire length of the claval suture; apex with an irregular piceous patch, the upper and lower margins bilobed; *Cuneus;* apex brown, base broadly pale. *Legs; thighs* reddish-yellow, apex pale yellow; 3rd pair with a few brown spots next the apex; *tibiæ, tarsi,* and *claws* paler than in *Bohemanni.*

Abdomen red underneath; margins of the segments more or less broadly blackish.

A very abundant species at Deal, in August, by sweeping dwarf sallows, &c. It is exceedingly active in the net. The variety *N. furcatus* is somewhat scarce, and is probably only an immature form.

Species 2.—Neocoris Scotti.

Monosynamma Scotti, *Fieb.* (MS.) (1863).
Microsynamma Scotti, *Fieb.* (MS.) (1863).
Monosynamma Scotti, *Scott,* Ent. Ann, 160, fig. 5 (1864).

Black, shining, clothed with very short, griseous-yellow hairs.

Head.—Antennæ black; base and apex of the 1st joint and apex of the 2nd narrowly white; 4th piceous. *Rostrum;* 1st joint piceous; 2nd and 3rd reddish-yellow; apex of the 3rd and 4th piceous.

Thorax.—Pronotum very thickly and finely punctured posteriorly, sometimes with a short reddish central line, not reaching to the posterior margin, and with a small fovea on each side of the centre between the callosities. *Scutellum;* basal angles and sometimes a central line reddish; hinder portion very finely punctured. *Elytra* very finely shagreened; *Clavus;* inner margin narrowly black; disk pitchy brown; *Corium;* anterior margin blackish; disk pitchy brown; extreme base, and a narrow line between the apex of the clavus and the inner margin of the clavus, paler; *Cuneus* pitchy brown; base next the anterior margin narrowly pale; *Membrane* very pale pitchy brown; between the apex of the cuneus and the inner cell a whitish, triangular patch; inner marginal nerve pale brown; cell-nerves yellowish-white; inner cell and both margins of the outer one more or less broadly margined with brown. *Sternum* black. *Legs; coxæ* black, apex yellow; *fulcra* yellow; *thighs* pitchy black or reddish-brown, apex yellowish or reddish-yellow; underside of the 2nd and 3rd pairs with an indistinct, longitudinal row of spots; *tibiæ* yellow, with large black spots, in each of which is set a stout, somewhat spinose, black hair; apex narrowly black; *tarsi* yellow; apex of the 3rd joint, and *claws*, brown.

Length, $1\frac{1}{3}$—$1\frac{1}{2}$ line.

This insect might at first sight be mistaken for *N. Bohemanni*, but is easily separated from it by the absence of the pale triangular patch at the base of the corium, and the sometimes almost obsolete inner cell.

Taken at Deal, in August, by sweeping amongst dwarf sallows, &c., in company with *N. Bohemanni*.

Genus 2.—AGALLIASTES, *Fieb.*

Minute; ♂ somewhat parallel; ♀ suboval; sometimes both sexes with undeveloped elytra. *Legs* saltatorial; *thighs;* 3rd pair stout, flattened on the sides.

Head short, broad, vertical in front; $2\frac{1}{2}$ times as broad across the eyes as long; *Crown* flattish convex, level with the upper margin of the eyes, very much deflected; hinder margin with a very narrow

keel; *Clypeus* convex; base a little below the anterior margin of the eyes, apex very slightly produced, almost in a line with the very short antenniferous processes; the latter in a line with the lower margin of the eyes; *Face;* central lobe short, stout, convex; side lobe very short, narrow. *Antennæ* shorter than the body; 1st joint clavate, much shorter than the head; 2nd, 3 times longer than the 1st, slightly thickened to the apex; 3rd and 4th filiform, together longer than the 2nd, 3rd, $\frac{2}{3}$rds the length of the 2nd, 4th, about $\frac{2}{3}$rds the length of the 3rd. *Eyes* large, viewed from above almost hemispherical, from the side, short oval. *Rostrum* reaching to the 2nd pair of coxæ; 1st joint stout, reaching to the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, twice as broad across the posterior margin as long, sometimes with 2 callosities behind the anterior margin; the latter straight, angles rounded; sides convex; hinder angles short, somewhat acute; posterior margin concave; disk flattish convex, slightly deflected to the head. *Scutellum* triangular, equilateral, level with the clavus, with a transverse channel near the base; anterior portion flattish, very slightly deflected to the transverse channel; hinder portion flattish convex. *Elytra;* in developed examples, longer than the abdomen; in undeveloped examples, not covering more than half the abdomen; in the latter case, the clavus is not distinct from the corium, and the cuneus and membrane are wanting: in developed examples the *Clavus* convex, deflected to the corium; *Corium* horizontal, convex; cuneus and membrane slightly deflected; *Cuneus* longish, triangular; base broad. *Sternum: Prosternum;* xyphus triangular, very convex in front; *Mesosternum* convex, flattish in the middle, somewhat elevated posteriorly, and with a central channel; posterior margin rounded; *Metasternum* convex, in the middle short angled. *Legs* saltatorial; *thighs;* 3rd pair stout, flattened on the sides; *tarsi* of the 3rd pair long, thin; 2nd joint shorter than the 3rd; 1st about $\frac{2}{3}$rds the length of the 2d.

Species 1.—AGALLIASTES PULICARIUS.

PHYTOCORIS PULICARIUS, *Fall.* Mon. Cim. 95, 81 (1807).
CAPSUS SALIENS, *Wolff,* Ic. Cim. 200, tab. 20, fig. 194 (1811).
PHYTOCORIS PULICARIUS, *Fall.* Hem. Succ. i, 113, 71 (1829).
ATTUS — *Hahn,* Wanz. i, 117, fig. 62 (1831); *Burm.* Handb. ii, 227, 2 (1835).

Capsus pulicarius, *Meyer*, Caps. 110, 102 (1843); *Sahlb.* Geoc. Fen. 119, 63 (1848); *Kirschb.* Caps. 101, 149 (1855).
— (Capsus) pulicarius, *Flor*, Rhyn. Liv. i, 600, 80 (1860).
Agalliastes pulicarius, *Fieb.* Europ. Hem. 312, 7 (1861).

Black, sparingly clothed with short grayish hairs.

Head.—Antennæ; 1st and 2nd joints black; 3rd and 4th, and frequently the apex of the 2nd, broadly yellowish, or pale brownish-yellow. *Eyes* black or brown-red. *Rostrum* pale brownish-yellow, tip black.

Thorax.—Elytra; Membrane blackish, iridescent; cell-nerves black. *Legs* black or brownish-black; *thighs;* apex yellow; 1st and 2nd pairs near the apex on the upperside with a black spot, in which is set a stout, somewhat spinose, black hair; extreme apex of the 3rd pair brown; *tibiæ* yellow, with large black spots, especially the 2nd and 3rd pairs, in each of which is set a stout, somewhat spinose black hair; apex of the 2nd and 3rd pairs narrowly black; *tarsi* yellowish; 3rd joint and *claws* black.

Abdomen entirely black.

Length, 1 line.

An abundant species at Deal, in August, by sweeping amongst dwarf sallows, &c. Also under *Erodium cicutarium.* It is exceedingly active and difficult of capture, owing to its saltatorial habit.

Species 2.—Agalliastes saltitans.

Lygæus saltitans, *Fall.* Mon. Cim. 96, 80 (1807).
Phytocoris saltitans, *Fall.* Hem. Suec. i, 114, 72 (1829).
Halticus saltians, *Burm.* Handb. ii, 278, 5 (1835).
Chlamydatus marginatus, *Curtis,* B. E. xv, 693 (1838).
Astemma saltians, *Am. et Serv.* Hém. 284, 2 (1843).
Capsus saltitans, *Sahlb.* Geoc. Fen. 119, 64 (1848); *Kirschb.* Caps. 103, 153 (1855).
— (Capsus) saltitans, *Flor,* Rhyn. Liv. i, 603, 82 (1860).
Agalliastes saltitans, *Fieb.* Europ. Hem. 311, 3 (1861).

Black, clothed with fine, short, yellow hairs. *Elytra* generally undeveloped in both sexes, not covering more than half the abdomen; *Clavus* not distinct; *Cuneus* and *Membrane* wanting.

Head.—Crown; hinder margin brownish-yellow or reddish. *An-*

tennæ; 1st and 2nd joints black, extreme apex of the 2nd generally reddish; 3rd and 4th piceous, 4th palest. *Rostrum* brown-black.

Thorax.—Pronotum behind the anterior margin, with 2 callosities; disk behind the latter, very finely wrinkled transversely. *Scutellum;* the transverse channel generally interrupted in the middle by a somewhat indistinct longitudinal keel. *Elytra* finely wrinkled transversely, not covering more than half the abdomen, rounded at the apex; pitchy brown, gradually become paler towards and at the apex, the latter frequently pale-yellowish; before the apex of the anterior margin a small, round, pale spot; the base with a large, somewhat triangular, yellowish or yellowish-white patch. *Legs* black or brown-black; *thighs* at the apex reddish or reddish-yellow; *tibiæ* brownish-yellow, with fine, somewhat spinose, black hairs, base frequently, and apex blackish; *tarsi;* 1st joint brownish-yellow; 2nd and 3rd, and *claws*, black.

Abdomen; upperside pitchy brown or blackish, clothed with short yellow hairs; margin of the connexivum frequently reddish or reddish-yellow; underside black, clothed with fine, short, yellow hairs.

Length, $\frac{3}{4}$—1 line.

This species has not been detected by us as yet. The specimens from which the above description is made were captured by Mr. Crotch, but we have neither date nor locality given. Dr. Flor says, "not particularly common on dry sandy places, in June and July."

Genus 3.—ORTHOCEPHALUS, *Fieb.*

♂, developed; *Elytra* parallel; ♀ undeveloped; *Abdomen* posteriorly oval; *Cuneus* and *Membrane* wanting.

Head stouter in the ♀ than the ♂, short, vertical; in the ♂ $1\frac{1}{2}$, in the ♀ $2\frac{1}{2}$ times as broad across the eyes as long; *Crown* flat, considerably deflected to the base of the clypeus; *Clypeus* very convex; apex and antenniferous processes in a line with the lower margin of the eyes; *Face;* central lobe long, stout, convex, side lobes short, narrow. *Antennæ* stouter in the ♂ than the ♀, almost as long as the body; 1st joint clavate, rather shorter than the head; 2nd $3\frac{1}{2}$ times longer than the 1st, stout, thickened to the apex in the ♂, in the ♀ somewhat clavate; 3rd and 4th filiform, 3rd $\frac{2}{3}$rds of the 2nd,

together as long as, or rather shorter than the 2nd. *Eyes* large, prominent, above hemispherical; viewed from the side, short oval. *Rostrum* reaching to the 2nd or 3rd pair of coxæ; 1st joint stout, free, reaching almost to the end of the xyphus of the prosternum.

Thorax.—Pronotum short trapeziform, twice as broad across the posterior margin as long, and with 2 callosities in front; anterior margin straight, angles rounded; sides straight; hinder angles short, rounded, somewhat raised; posterior margin concave in the middle, rounded towards and at the hinder angles. *Scutellum* triangular, equilateral, flattish convex, almost level with the clavus, and with a transverse channel near the base. *Elytra* in the ♂ longer than the abdomen, convex horizontal as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* long, triangular; in the ♀ very convex, shorter than the abdomen, without cuneus and membrane, gradually widening from the base to the rounded apex. *Sternum: Prosternum;* xyphus triangular, sides margined; *Mesosternum* short, convex, elevated posteriorly; posterior margin indented in the middle; *Metasternum* short, convex. *Legs; thighs* stout; 3rd pair thickened, stouter in the ♀ than the ♂; *tibiæ;* 3rd pair long; *tarsi;* 2nd joint longest.

Species 1.—ORTHOCEPHALUS MUTABILIS.

CAPSUS MUTABILIS, *Fall.* Mon. Cim. 98, 4 (1807); Hem. Succ. i, 118, 5 (1829); *Kirschb.* Caps. 83, 107 (1855).
— PILOSUS, *Hahn,* Wanz. ii, 96, fig. 181 (1834); *Meyer,* Caps. 59 24 (1843).
— (CAPSUS) PILOSUS, *Flor,* Rhyn Liv. i, 564, 56 (1860).
ORTHOCEPHALUS MUTABILIS, *Fieb.* Europ. Hem. 291, 8 (1861).

Black, covered with yellow scales and long, erect, black hairs. *Legs* entirely black.

Head.—Crown; near each eye a small reddish spot. *Antennæ* black, with long, almost erect, black hairs. *Rostrum* black.

Thorax.—Pronotum in the ♂ slightly deflected to the head; in the ♀ almost horizontal. *Elytra* of the ♂: *Clavus* black; *Corium* pitchy brown; anterior margin black; ciliate; disk along the claval suture more or less broadly pale brownish-yellow, and somewhat diaphanous; *Cuneus* black; *Membrane* brownish-black, with a broad,

irregular, whitish margin round the cells; cell-nerves pitchy black; cells whitish; in the outer cell towards the apex frequently 1 or 2 piceous spots: of the ♀; *Clavus* imperfectly separated from the *Corium*, the latter without *cuneus* and *membrane*, rounded at the apex, and not covering the abdomen. *Sternum* in both sexes black. *Legs* black; *thighs* clothed with long, erect, black hairs; 3rd pair stout; *tibiæ* with long, erect, somewhat spinose hairs; *tarsi* and *claws* black.

Abdomen black.

Length, 2—2¼ lines.

Not uncommon. By sweeping grass, &c., at Weybridge, in July.

Species 2.—ORTHOCEPHALUS SALTATOR.

CAPSUS SALTATOR, *Hahn*, Wanz. iii, 11, fig. 236 (1835); *Meyer*, Caps. 112, 106 (1843); *Kirschb.* Caps. 83, 108, & p. 118 (1855).

— HIRTUS, *Curt.* B. E. xv, pl. 693 (1838).

— (CAPSUS) MUTABILIS, *Flor*, Rhyn. Liv. i, 567, 58 (1860).

ORTHOCEPHALUS SALTATOR, *Fieb.* Europ. Hem. 291, 6 (1861).

Black, covered with yellow scales and long, erect, black hairs; *tibiæ* reddish-yellow.

Head.—Crown; near each eye a small reddish-yellow spot. *Antennæ*; black, clothed with somewhat erect black hairs. *Rostrum* black.

Thorax.—Pronotum in the ♂ deflected to the head, in the ♀ almost horizontal. *Elytra* of the ♂ pitchy brown; *Clavus;* inner margin narrowly black; *Corium;* anterior margin black, ciliate; *Cuneus* black; *Membrane* brown-black, iridescent; cell-nerves pitchy black; cells brown-black: ♀ without cuneus or membrane; *Clavus* not separated from the corium; the apex of the latter rounded, and not covering the abdomen. *Sternum* black. *Legs* black; *thighs* with long, somewhat erect, black hairs; *tibiæ* reddish-yellow, base and apex black, the latter half frequently black; *tarsi* and *claws* black.

Abdomen black.

Length, ♂ 2¼, ♀ 1¾ lines.

Not uncommon. By sweeping clover, grass, &c., in July and August. Shirley; Eltham; Mickleham; Folkestone; Llantrissant, South Wales; Mablethorpe, Lincolnshire (*Wollaston*).

Genus 4.—Heterocordylus, *Fieb.*

Elongate, slightly oval.

Head somewhat short, very much deflected, twice as broad across the eyes as long; *Crown* flattish convex, hinder margin keeled; *Clypeus* convex, base almost in a line with the anterior margin of the eyes, apex a little beyond, antenniferous processes short, in a line with the lower margin of the eyes; *Face;* central lobe longish, convex, somewhat prominent, side lobes short, narrow. *Antennæ* shorter than the body; 1st joint shorter than the head, somewhat clavate; 2nd fusiform, or gradually thickened to the apex, $3\frac{1}{2}$ times longer than in the 1st; in the ♂ thinner than in the ♀; 3rd and 4th filiform, together about $\frac{1}{2}$ as long as the 2nd. *Eyes* large, prominent, viewed from above somewhat hemispherical, from the side short oval. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum longish trapeziform, twice as broad across the posterior margin as long, and with 2 callosities in front; anterior margin straight, not so long in the ♂ as in the ♀; angles round; sides almost straight; hinder angles short, slightly rounded; posterior margin indented in the middle, rounded towards and at the hinder angles. *Scutellum* triangular, raised above the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* somewhat convex, and slightly raised posteriorly, cuneus and membrane deflected; *Cuneus* triangular. *Sternum: Prosternum;* xyphus short, triangular, faintly punctured, sides somewhat margined; *Mesósternum* convex, elevated posteriorly; posterior margin convex, slightly indented in the middle; *Metasternum* flattish convex. *Legs: tarsi;* 2nd joint of the 3rd pair equal to the 3rd, 1st about $\frac{2}{3}$rds the length of the 2nd.

Species 1.—Heterocordylus unicolor.

Capsus unicolor, *Hahn,* Wanz. ii, 94, fig. 179 (1834); *Kirschb.* Caps. 84, 111 (1855).

Heterotoma pulverulenta, (*Klug*) *Burm.* Handb. ii, 275, 3 (1835).

Heterocordylus unicolor, *Fieb.* Europ. Hem. 290, 4 (1861).

♂ elongate, ♀ oval. Black; thickly covered with white scales and short, fine, depressed yellow hairs; *Head* of the ♀ wider across the eyes than the ♂; 2nd joint of the *Antennæ* of the ♀ stout, fusiform-clavate.

Head.—Crown of the ♀ depressed on each side next the hinder margin. *Antennæ;* 2nd joint in the ♂ slightly thickened from the base to the apex; in the ♀ stout, fusiform-clavate, clothed with short black hairs. *Rostrum* brown.

Thorax.—Pronotum finely wrinkled transversely. *Elytra* finely shagreened; *Membrane* black; between the apex of the cuneus and the inner cell-nerve a white patch; inner cell white. *Legs* black.

Length, ♂ 2, ♀ 1¾ line.

Scarce. By sweeping *Genista tinctoria*, in July, near Hartley, Northumberland (*Bold*); Wales (*Wollaston*), no date nor locality.

Species 2.—Heterocordylus leptocerus.

Capsus mutabilis, *Hahn*, Wanz. ii, 95, fig. 180 (1834), ♀?
— leptocerus, *Kirschb.* Caps. 85, 112 & 149, 17 (1855).
Heterocordylus leptocerus, *Fieb.* Europ. Hem. 290, 3 (1861).

♂ elongate, almost parallel. Black, covered with white scales and short, fine, depressed, yellowish hairs.

Head.—Crown with a fovea near each eye, adjoining the hinder marginal keel. *Antennæ;* 2nd joint very slightly thickened from the base to the apex; 4th at the apex reddish-yellow. *Rostrum* pitchy brown.

Thorax.—Pronotum very finely wrinkled transversely; callosities almost obsolete. *Scutellum* very finely wrinkled transversely. *Elytra* finely shagreened; *Membrane* dark brown; between the apex of the cuneus and the inner cell a pale patch; cell-nerves pitchy brown; inner cell pale. *Legs* black.

Length, 2 lines.

We have seen only one example, taken by Dr. Power, in Parkhurst Forest, Isle of Wight, in July, 1861. It agrees in all respects with the descriptions of Kirschbaum and Fieber, except the outer cell of the membrane, which is described by them as being darker than the other portion. Kirschbaum says, "not common on flowers in fir-woods, in July."

Species 3.—Heterocordylus tibialis.

Capsus tibialis, *Hahn*, Wanz. i, 128, fig. 66 (1831); *Kirschb.* Caps. 85, 113 (1855).
— Spartii, *Boh.* in lit. (Fieber).
Heterocordylus tibialis, *Fieb.* Europ. Hem. 290, 2 (1861).

Black, thickly covered with whitish scales and short, fine, depressed, yellowish-hairs; *tibiæ* reddish-yellow, base and apex black-brown.

Head.—*Crown* with a fovea near each eye, adjoining the hinder marginal keel. *Antennæ;* 2nd joint slightly clavate, 4th frequently reddish-brown. *Rostrum* piceous, 4th joint black.

Thorax. — *Pronotum* finely wrinkled transversely; callosities prominent. *Scutellum* finely wrinkled transversely. *Elytra* finely shagreened; *Membrane* piceous; between the apex of the cuneus and the inner cell-nerve a whitish patch; below the latter, and extending to the apex of the anterior margin a brown patch; cell-nerves brown, apex of the inner one whitish; outer cell, and sometimes the whole or a portion of the inner one brown. *Sternum* in the middle brownish-yellow. *Legs; coxæ* and *fulcra* dusky-yellowish; *thighs* black; *tibiæ* reddish-yellow, base and apex black-brown; *tarsi* and *claws* black.

Length, 2½ lines.

Not uncommon on broom, at Croydon, Shirley, Dartford Heath, Birch Wood, Wimbledon, &c., in June and July.

Genus 5.—Atractotomus, *Fieb.*

Short, somewhat narrow, sides in the ♂ almost parallel, in the ♀ slightly oval.

Head pointed, short, almost vertical in front, 2 to 2½ times as broad across the eyes as long; *Crown* convex; *Clypeus* convex, very much deflected, apex almost level with the anterior margin of the eyes; antenniferous processes very short, in a line with the lower margin of the eyes; *Face* pointed; central lobe long, convex, slightly prominent; side lobes short, narrow. *Antennæ* shorter than the

body, of variable thickness, 1st joint somewhat clavate, shorter than the head; 2nd almost 4 times as long as the 1st, cylindrical-fusiform, or gradually thickened to the apex; 3rd and 4th filiform, together as long or nearly as long as the 2nd, 4th more than ½ the length of the 3rd. *Eyes* large, prominent, viewed from above hemispherical, from the side long oval. *Rostrum* free, reaching to beyond the 3rd pair of coxæ; 1st joint reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, twice as broad on the posterior margin as long, and with 2 more or less distinct callosities in front; anterior margin straight, longer in the ♀ than the ♂, angles rounded; sides very slightly convex; hinder angles short, somewhat rounded; posterior margin slightly concave; disk flattish convex, deflected to the head. *Scutellum* triangular, equilateral, a little raised above the clavus, and with a transverse channel near the base. *Elytra* longer than the abdomen, horizontal as far as the junction with the cuneus and membrane, which are deflected; *Clavus* convex, deflected to the corium; *Corium* flattish convex between the claval suture and the 1st nerve, between the latter and the anterior margin convex; *Cuneus* triangular, the base and anterior margin sometimes of almost equal length. *Sternum: Prosternum;* xyphus triangular, somewhat convex; *Mesosternum* convex, elevated posteriorly, centre channeled; posterior margin almost straight, centre convex, indented; *Metasternum* very obtuse, centre somewhat convex. *Legs: thighs;* 3rd pair stoutest, flattened on the sides; *tarsi;* 3rd pair, the joints of almost equal length.

Species 1.—ATRACTOTOMUS MAGNICORNIS.

CAPSUS MAGNICORNIS, *Fall.* Mon. Cim. 99, 7 (1807; Hem. Suec. i, 119, 8 (1829); *Zett.* Ins. Lap. 278, 4 (1839); *Kirschb.* Caps. 91, 126 & p. 118 (1855).
— (CAPSUS) MAGNICORNIS, *Flor,* Rhyn. Liv. i, 575, 62 (1860).
ATRACTOTOMUS — *Fieb.* Europ. Hem. 294, 8 (1861).

♀ Black, covered with fine, golden-yellow and white scales intermixed, and short, almost erect, black hairs; *tibiæ* yellowish-white, with small black spots, and somewhat spinose black hairs.

Head.—Antennæ; 1st and 2nd joints black, clothed with short black hairs, the latter stout, cylindrical-fusiform; 3rd and 4th yellowish. *Rostrum* brown, tip black.

Thorax.—Pronotum slightly deflected to the head. *Elytra; Clavus* chestnut-brown, inner margin narrowly black; *Corium;* anterior margin dark brown, widest at the apex; disk chestnut-brown; posterior margin very narrowly white; *Cuneus* dark brown; *Membrane* blackish, along the inner margin of the cuneus narrowly white; cell-nerves whitish; cells brownish. *Legs; thighs* black; *tibiæ* yellowish-white, with small black spots and short, somewhat spinose, black hairs; the base broadly, the apex narrowly, brown; *tarsi* yellowish; 3rd joint at the apex broadly, and *claws*, blackish.

Length, 1½ line.

We have only seen 2 ♀ examples of this insect, taken by Dr. Power, one at Cowley, in July, and the other in Kew Gardens, in August.

According to Flor, it is not uncommon on *Pinus Abies*, from June to September.

In form and size it closely resembles the *Capsus magnicornis* of Hahn, 'Wanz.,' i, 130, fig. 67, and Meyer, Caps. 62, 29, t. 2, fig. 4, but it is there described and figured as having black rings on the hinder tibiæ.

Species 2.—Atractotomus Pini.

Pitchy black or brown, clothed with very short, depressed, yellow and white hairs intermixed, having a scale-like appearance, and with longer and almost erect black ones.

Head.—Antennæ brownish-yellow or pitchy brown, apex of the 4th joint yellowish. *Eyes* large, dark brown, with a reddish-tinge. *Rostrum* brownish-yellow; 1st joint and base of the 2nd and 3rd piceous; 4th black.

Thorax.—Pronotum finely wrinkled transversely. *Elytra; Clavus* somewhat shagreened; *Corium;* anterior margin ciliate, the extreme base generally, and sometimes a small portion of the anterior margin, brownish-yellow; *Membrane* diaphanous, iridescent, fuscous, darker along the anterior margin; below the apex of the outer cell a small whitish spot, and along the inner margin of the cuneus narrowly white; cell-nerves piceous, apex of the outer cell-nerve yellowish; cells brown. *Sternum* black. *Legs* pitchy black or brown; *thighs*

clothed with short yellow hairs; extreme base of all the pairs brownish-yellow; *tibiæ* pale brownish, with long, somewhat spinose black hairs, apex blackish; *tarsi* and *claws* piceous.

Abdomen.—Upper and undersides pitchy black or brown, the latter clothed with short yellow hairs.

Length, $1\frac{1}{2}$—$1\frac{3}{4}$ line.

Abundant on *Pinus sylvestris*, in July, at Dartford Heath and Shirley.

Dr. Fieber agrees with us in its being distinct. It differs from the other species of the genus in its more elongate form and the thinner 2nd joint of the antennæ. Immature examples are pale-brownish or pitchy yellow.

Genus 6.—Heterotoma, *Lat.*

Elongate, narrow, almost parallel.

Head horizontal, $1\frac{1}{2}$ times as broad across the eyes as long; *Crown* almost flat, level with the upper margin of the eyes; *Clypeus* convex, prominent, apex rounded; antenniferous processes short, in a line with the middle of the eyes; *Face* vertical; central lobe long and pointed, very convex and considerably produced; side lobes short, narrow, slightly rounded outwardly. *Antennæ* shorter than the body; 1st and 2nd joints greatly incrassated, especially the latter, 1st cylindrical, as long as the head, 2nd fusiform, flattened on the sides, almost 3 times longer than the 1st; 3rd and 4th filiform, subequal, very short, together about $\frac{1}{2}$ the length of the 2nd. *Eyes* large, prominent, viewed from above subglobose, from the side reniform. *Rostrum* reaching to beyond the 3rd pair of coxæ; 1st joint stout, reaching to the xyphus of the prosternum.

Thorax.—*Pronotum* longish trapeziform, $1\frac{1}{3}$ times as broad on the posterior margin as long, and with 2 callosities in front; anterior margin straight, slightly indented in the middle, angles rounded; sides slightly concave; hinder angles acute; posterior margin slightly concave, extremities rounded to the hinder angles. *Scutellum* triangular, equilateral, almost level with the clavus, with a transverse channel a little before the centre. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* horizontal as far as the junction with the cuneus and membrane, which

are slightly deflected; disk flattish convex between the claval suture and the 1st nerve, between the latter and the anterior margin convex; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus triangular, sides keeled; *Mesosternum* long, elevated posteriorly; sides flattish, convex above, with a central channel extending from the middle to, and gradually widening as it approaches, the posterior margin; the latter concave, rounded towards, and at the centre, which is indented; *Metasternum;* centre obtuse-angled, convex. *Legs* somewhat long, slender; *tarsi* slender; 3rd pair, joints of almost equal length.

Species 1.—HETEROTOMA MERIOPTERA.

CIMEX MERIOPTERUS, *Scop.* E. C. 382 (1763); *Rossi*, F. E. 1344 (1790).

LYGÆUS SPISSICORNIS, *Panz.* F. G. 2, 16 (1793).

HETEROTOMA MERIOPTERA, *Burm.* Handb. ii, 276, 1 (1835); *Am. et Serv.* Hém. 283, 1 (1843); *Fieb.* Europ. Hem. 290 (1861).

Olive or reddish-brown, clothed with fine, depressed, white hairs.

Head.—Antennæ black, 1st and 2nd joints thickly clothed with black hairs; 3rd at the base broadly, 4th narrowly, yellowish-white. *Rostrum* yellowish, tip black.

Thorax.—Pronotum finely wrinkled transversely, deflected to the head: *Elytra: Clavus;* inner margin narrowly black; *Corium;* anterior margin blackish, ciliate; disk along the 1st nerve generally reddish or reddish-brown; *Cuneus* reddish or reddish-brown, anterior margin blackish; *Membrane* blackish; below the apex of the cuneus a somewhat triangular white spot, immediately followed by a black triangular patch, extending to the apex of the anterior margin, where it is darkest; cell-nerves red-brown, narrowly margined with brown. *Sternum* pitchy black. *Legs; coxæ* and *fulcra* yellowish-white; *thighs* yellowish or greenish-white; *tibiæ* yellowish-white; *tarsi* yellowish, 3rd joint and *claws* brown. *Abdomen* black.

Length, $2\frac{1}{4}$—$2\frac{1}{2}$ lines.

Very common on nettles and other plants in hedges, in July and August. It has occurred at Eltham, Bexley, Darenth, Mickleham, and other places in the London district.

Genus 7.—RHOPALOTOMUS, *Fieb.*

Longish oval, stout.

Head vertical in front, twice as broad on the posterior margin as long; *Crown* nearly flat, very much deflected, almost in a line with the upper margin of the eyes, with a deep fovea in the centre between the latter; *Clypeus* convex; side lobes stout, convex, rounded outwardly; antenniferous processes short; *Face* vertical; central lobe long, flattish at the base, convex towards the apex; side lobes short, narrow, rounded outwardly. *Antennæ* a little shorter than the body; 1st and 2nd joints stout, especially the 2nd; 1st somewhat cylindrical, almost as long as the head; 2nd fusiform at the apex, gradually tapering to the base, 2½ times as long as the 1st; 3rd and fourth filiform, subequal, together about as long as the 2nd. *Eyes* large, oval. *Rostrum* stout, reaching to the 3rd pair of coxæ; 1st joint very stout, reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short trapeziform, 1½ times as broad on the posterior margin as long; anterior margin straight, with a collar, angles rounded, sides straight, hinder angles rounded, very slightly raised; posterior margin convex, slightly indented in the middle; disk convex, deflected to the head, with 2 callosities in front. *Scutellum* triangular, almost equilateral, nearly level with the clavus, with a transverse channel near the base. *Elytra* a little longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex, somewhat elevated posteriorly; cuneus and membrane deflected; *Cuneus* triangular, base somewhat broad. *Sternum: Prosternum;* xyphus triangular, sides keeled; *Mesosternum* convex, elevated posteriorly, and with a central channel; posterior margin convex; *Metasternum* with a central channel. *Legs* somewhat stout, 3rd pair longest; *thighs;* 3rd pair stoutest; *tarsi;* 3rd pair, 3rd joint almost as long as the 1st and 2nd, which are subequal.

Species 1.—Rhopalotomus ater.

Cimex ater, *Lin.* S. N. 725, 72 (1767).
— semiflavus, *Lin.* F. S. 944 (1761); S. N. 725, 68 (1767).
— tyrannus, *Fab.* Mantiss. ii, 305, 262 (1787).
— flavicollis, *Fab.* Mantiss. ii, 305, 266 (1787).
Lygæus — *Fab.* E. S. iv, 178, 156 (1794); *Wolff*, Ic. Cim. 32, t. 4, fig. 32 (1800).
Capsus tyrannus, *Fab.* S. R. 242, 4 (1803),
— flavicollis, *Fab.* S. R. 243, 13 (1803).
Lygæus tyrannus, *Fab.* E. S. iv, 177, 150 (1794); *Wolff*, Ic. Cim. 152, t. 15, fig. 146 (1804).
Capsus ater, *Fab.* S. R. 241, 2 (1803); *Fall.* Hem Suec. i, 116, 2 (1829); *Hahn*, Wanz. i, 126, fig. 165 (1831); *H. Schf.* Nom. Ent. i, 52 (1835); *Burm.* Handb. ii, 275, 4 (1835); *Zett.* Ins. Lap. 277, 1 (1839); *Sahlb.* Geoc. Fen. 121, 67 (1842); *Meyer*, Caps. 108, 99 (1843); *Am. et Serv.* Hém. 281, 2 (1843); *Kirschb.* Caps. 54, 46 (1855).
Heterotoma ater, *Kolen.* Mel. Ent. ii, 127, 113 (1845).
Capsus (Capsus) ater, *Flor*, Rhyn. Liv. i, 486, 10 (1860).
Rhopalotomus ater, *Fieb.* Europ, Hem. 263, 1 (1861).

Shining, ♂ black; ♀, head and pronotum reddish or orange-yellow, somewhat thickly clothed with fine depressed yellowish hairs.

Head: of the ♂; *Antennæ* black, 1st and 2nd joints clothed with fine, short, black hairs, 1st frequently pitchy brown; 3rd at the base yellow; ♀; *Crown* reddish or orange-yellow; *Clypeus* black; *Face* black. *Antennæ* as in the ♂. *Rostrum* reddish-yellow; 3rd and 4th joints brown or black.

Thorax.—Pronotum of the ♂ black; disk, except the callosities, thickly and deeply punctured; ♀ reddish or orange-yellow. *Scutellum* in both sexes finely wrinkled transversely. *Elytra* finely wrinkled and punctured; *Membrane* blackish; cell-nerves black. *Sternum* black. *Legs; Coxæ* and *fulcra* pitchy brown or reddish, the former generally piceous on the outside; *thighs* pitchy brown or reddish, with one or two black rings next the apex; *tibiæ* brownish-red or reddish-yellow, with short, somewhat spinose, black hairs; apex black; *tarsi* reddish-yellow; 3rd joint black; *claws* red.

Abdomen black underneath.

Length, 2½—3 lines.

Common. By sweeping grass, &c., in July.

Genus 8.—Capsus, *Fab.*

Elongate, oval, broad.

Head very much deflected, viewed from above pointed, the length almost equal to the breadth across the eyes; *Crown* slightly convex, nearly horizontal, almost level with the upper margin of the eyes; *Clypeus* convex; side lobes short, convex, narrow; antenniferous processes short in a line with the middle of the lower half of the eyes; *Face;* central lobe very prominent, convex, pointed; side lobes short, narrow, almost parallel. *Antennæ* shorter than the body; 1st and 2nd joints incrassated, especially the 2nd; 1st almost cylindrical, shorter than the head; 2nd, in the ♂ gradually thickened to the apex; in the ♀ fusiform at the apex, tapering to beyond the middle, then cylindrical to the base, 3 times as long as the 1st; 3rd and 4th filiform, together about $\frac{2}{3}$rds the length of the 2nd, 4th $\frac{2}{3}$rds of the 3rd. *Eyes* oval, very large and prominent. *Rostrum* reaching to the 3rd pair of coxæ; 1st joint stout, as long as the head; 2nd, 3rd, and 4th thinner.

Thorax. — *Pronotum* trapeziform, $1\frac{1}{2}$ times as broad on the posterior margin as long; anterior margin narrow, concave, with a collar, angles rounded; sides slightly convex; hinder angles acute, slightly raised; posterior margin concave in the middle, rounded towards and at the hinder angles; disk very convex, deflected to the head, and with 2 callosities in front, generally joined by a short transverse keel. *Scutellum* triangular, equilateral, very convex, considerably raised above the clavus. *Clavus* convex, deflected to the corium; *Corium* slightly elevated posteriorly; cuneus and membrane deflected; disk almost flat between the claval suture and the 1st nerve, between the latter and the anterior margin convex; anterior margin reflexed; *Cuneus* triangular, broad at the base. *Sternum: Prosternum;* xyphus convex, faintly channelled in the centre, sides keeled; *Mesosternum* short, convex, with a central channel; posterior margin almost straight, rounded towards the sides; *Metasternum;* central angle prominent, convex. *Legs; thighs* somewhat cylindrical; *tarsi;* 3rd pair, 3rd joint longest, 1st and 2nd almost equal.

Species 1.—Capsus capillaris.

Cimex capillaris, *Fab.* Mantiss. ii, 305, 270 (1787).
— tricolor, *Fab.* Mantiss. ii, 306, 272 (1787).
Lygæus capillaris, *Fab.* E. S. iv, 180, 161 (1794).
— danicus. *Fab.* E. S. iv, 181, 165 (1794); *Wolff*, Ic. Cim. 34, t. 4, fig. 34 (1800).
— tricolor, *Fab.* E. S. iv, 181, 167 (1794); *Wolff*, Ic. Cim. 35, t. 4, fig. 35, *a—b* (1800).
Phytocoris danicus, *Fall.* Hem. Suec. i, 109, 64 (1829).
Capsus capillaris, *Burm.* Handb. ii, 274, 2 (1835); *Am. et Serv.* Hém. 281, 3 (1843); *Fieb.* Europ. Hem. 264, 10 (1861).
— tricolor, *H. Schf.* Nom. Ent. i, 51 (1835); *Meyer*, Caps. 108, 98 (1843); *Kirschb.* Caps. 52, 41 (1855).
— (Capsus) tricolor, *Flor*, Rhyn. Liv. i. 509, 23 (1860).

Varies in colour from black to reddish or orange-yellow. Not clothed with hairs. *Cuneus* red, apex broadly black or brown.

Head black or red; *Crown* and *Clypeus* in the latter case frequently with a brown or brownish-red central streak; *Face*; central lobe black. *Antennæ*; 1st and 2nd joints black, clothed with fine black hairs; 2nd in the middle, generally broadly yellowish; 3rd and 4th yellowish. *Rostrum* brown; tip black.

Thorax.—Pronotum black, reddish or orange-yellow; disk, except the callosities, thickly and deeply punctured; in reddish or orange-yellow examples the punctures and the posterior margin across the scutellum, black. *Scutellum* deeply punctured, black, red, or orange-yellow; or the basal half of the hinder portion black; apex brownish-red. *Elytra* thickly and deeply punctured, in reddish or orange-yellow examples the punctures black; *Clavus* black, reddish, or orange-yellow; in the latter case the inner margin narrowly black; *Corium* black, reddish, or orange-yellow; in the former case the disk more or less suffused with brownish-red, especially the basal half; *Cuneus* red, apex broadly black or brown, sometimes the base narrowly yellowish; *Membrane* blackish; below the apex of the cuneus a large yellowish-white patch; cell-nerves brown; cells yellowish-white. *Legs; thighs* black or brown, apical third yellowish; *tibiæ* yellow, below the base frequently with a broad brownish band, and a

short black streak along the outside, frequently wanting in the 1st and 2nd pairs; apex generally narrowly brown; *tarsi* and *claws* black.

Length, 3½ lines.

Common everywhere in the London district, on nettles and bramble flowers, in July and August.

Species 2.—Capsus scutellaris.

Lygæus scutellaris, *Fab.* E. S. iv, 180, 163 (1794).
Capsus — *Fab.* S. R. 245, 22 (1803); *Fieb.* Europ. Hem. 264, 9 (1861).
Phytocoris — *Fall.* Hem. Suec. i, 109, 63 (1829).
Capsus (Capsus) scutellaris, *Flor*, Rhyn. Liv. i, 510, 24 (1860).

Black, shining, not clothed with hairs. *Scutellum* in typical examples red. *Cuneus* black.

Head.—Crown; posterior margin narrowly yellowish. *Antennæ* black. *Rostrum* black.

Thorax.—Pronotum thickly and deeply punctured. *Scutellum* red, or blackish next the transverse channel, or entirely black, with a few deep punctures. *Elytra* deeply and coarsely punctured; *Cuneus* black, somewhat indistinctly punctured; *Membrane* blackish, below the apex of the cuneus a whitish patch; cell-nerves blackish. *Legs; thighs* black; *tibiæ* black, towards the apex brownish or reddish-yellow, and with fine, somewhat spinose, black hairs; *tarsi* and *claws* black.

Length, 3½ lines.

We have only seen a few examples of this species; one beaten from flowers of bramble, on Dartford Heath, in July; one taken by Dr. Power, at Hindolvestone, near East Dereham, Norfolk, in August; one by Mr. G. Lewis, and one or two by Mr. Dale, in Woolmer Forest, in July.

Fieber says the legs are orange-yellow; but none of our specimens, nor the descriptions of other authors, corroborate this.

Genus 9.—Systratiotus.*

Oval.

Head almost vertical in front, twice as broad across the eyes as long; *Crown* convex, very much deflected, raised a little above the

* Συ-στρατιώτης, a comrade.

upper margin of the eyes; hinder margin keeled; *Clypeus* convex, apex and antenniferous processes in a line with the middle of the under half of the eyes; *Face;* central lobe long, convex, somewhat pointed; side lobes short, narrow. *Antennæ* almost as long as the body; 1st joint somewhat cylindrical, about as long as the head; 2nd stout, gradually thickened to the apex, more than 3 times the length of the 1st; 3rd and 4th filiform, together about as long as the 2nd, 3rd a little longer than the 4th. *Eyes* somewhat large, prominent, viewed from above hemispherical, from the side longish oval. *Rostrum* short, reaching to the 3rd pair of coxæ; 1st joint free, as long as the head.

Thorax.—Pronotum short, trapeziform, twice as broad on the posterior margin as long; anterior margin straight, formed into a collar; angles slightly rounded; sides slightly convex; hinder angles short, rounded; posterior margin concave in the middle, rounded towards and at the hinder angles; disk convex, deflected to the head, with 2 callosities in front. *Scutellum* convex, slightly raised above the clavus, with a transverse channel near the base. *Elytra* longer than the abdomen, very slightly elevated posteriorly; cuneus and membrane deflected; *Clavus* convex, deflected to the corium; *Corium* flattish convex; *Cuneus* triangular, base as long as the anterior margin, the latter rounded, leaving a small but distinct notch at the base. *Sternum: Prosternum;* xyphus triangular, equilateral, sides keeled; *Mesosternum* short, convex, horizontal, with a central channel; posterior margin convex, reflexed, slightly indented in the middle; *Metasternum* in the centre, with a callosity. *Legs; tarsi* long, slender; 3rd joint of the 3rd pair longest, 1st almost as long as the 2nd.

Species 1.—Systratiotus nigritus.

Phytocoris nigrita, *Fall.* Hem. Succ. i, 97, 39 (1829).
Capsus nigritus, *H. Schf.* Nom. Ent. i, 52 (1835); *H. Schf.* Wanz. vi, 45, fig. 601 (1842); *Sahlb.* Geoc. Fen. 116, 56 (1848); *Kirschb.* Caps. 69, 73, & 113 (1855).
Capsus (Capsus) nigrita, *Flor,* Rhyn. Liv. i, 547, 44 (1860).
Polymerus* nigritus, *Fieb.* Europ. Hem. 391, 2 (1861).

Black, very thickly clothed with short, depressed, golden-yellow hairs. *Tibiæ* with 2 yellowish or reddish-yellow bands.

* *Polymerus,* a genus of Diptera, *Wied.* (1821).

Head.—Crown with a yellowish or reddish-yellow spot at the inner margin of each eye. *Antennæ* black, somewhat thickly clothed with short, nearly erect, black hairs. *Rostrum* pitchy black.

Elytra.—Corium; apical margin narrowly, and a spot immediately below the apex of the clavus, yellow or reddish-yellow; *Cuneus* black, the base broadly yellow or reddish-yellow, paler towards the inner margin; apex reddish yellow; basal inner angle narrowly black; *Membrane* black, faintly iridescent; cell-nerves yellowish, exteriorly with a pale yellowish margin; cells yellowish; apex of the outer one broadly black. *Legs* black, somewhat stout; *tibiæ* with 2 yellowish or reddish-yellow bands, and somewhat spinose black hairs; the band towards the apex at least twice as broad as that towards the base; *tarsi* and *claws* black; underside clothed with short, golden-yellow hairs.

Length, 2¼—2½ lines.

Extremely like *P. holosericeus*, of which we have not yet seen an authentic British specimen, but easily distinguished from it by its *entirely* black antennæ, and will most probably be found standing in collections in this country under the latter name. It is a somewhat common species at Mickleham and elsewhere by sweeping amongst *Stachys sylvatica*, &c., in July.

Family 14.—Lygidæ.

Genus 1.—Charagochilus, *Fieb.*

Short, oval.

Head almost vertical, in front somewhat pointed; 1⅓ times as broad across the eyes as long; *Crown* convex, very much deflected; *Clypeus* convex a little in front of, and running parallel with the anterior margin of the eyes; base almost level with the upper margin of the eyes; apex and short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex, somewhat pointed; side lobes short, narrow, rounded outwardly. *Antennæ* shorter than the body; 1st joint cylindrical, about as long as the head; 2nd about 2½ times as long as the 1st, slightly thickened to the apex; 3rd and 4th filiform, together as long as the 2nd, 3rd equal to the 4th. *Eyes* large, prominent, viewed from above hemispherical; from the side long oval. *Rostrum* reaching to the 2nd

pair of coxæ; 1st joint stout, reaching to the middle of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, 1½ times as broad on the posterior margin as long, with a collar in front; anterior margin straight, angles acute; sides convex; hinder angles short, rounded; posterior margins convex, slightly indented in the middle; disk very convex, deflected to the head. *Scutellum* convex, triangular, almost equilateral, raised above the clavus, with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum. *Elytra* horizontal as far as the junction with the cuneus and membrane, which are very much deflected; *Clavus* flattish, deflected to the corium; *Corium* convex, flattened at the base between the claval suture and the 1st nerve; *Cuneus* short, triangular, the base about as long as the anterior margin, the latter convex. *Sternum: Prosternum;* xyphus triangular; *Mesosternum* short, broad, compressed into a triangle in front, with a broad channel posteriorly. *Legs* somewhat short and stout; *tarsi;* 2nd and 3rd joints of almost equal length.

Species 1.—Charagochilus Gyllenhalii.

Phytocoris Gyllenhalii, *Fall.* Mon. Cim. 88, 61 (1807); Hem. Suec. i, 97, 40 (1829); *Zett.* Ins. Lap. 275, 22 (1839).
Capsus — *H. Schf.* Nom. Ent. i, 52 (1835); Wanz. iii, 86, fig. 310 (1835); *Meyer,* Caps. 61, 28 (1843); *Sahlb.* Geoc. Fen. 116, 57 (1848); *Kirschb.* Caps. 69, 75, & 114 (1855).
Charagochilus Gyllenhali, *Fieb.* Europ. Hem. 271 (1861).

Black, thickly and deeply punctured throughout, densely clothed with short, depressed, golden-yellow hairs, somewhat disposed in small, irregular patches upon the elytra.

Head.—Antennæ yellowish; 1st joint at the base, 2nd at the apex, apical half of the 3rd and 4th entirely brown. *Rostrum* pitchy black.

Thorax.—Pronotum; posterior margin narrowly ferruginous red. *Scutellum;* apex ferruginous red. *Elytra: Corium;* anterior margin brownish-red, base within the 1st nerve with a short reddish streak; apex of the 1st nerve with a small yellowish-white spot; posterior margin reddish; *Cuneus* brownish-red, darkest in the middle

at the anterior margin; extreme apex yellowish-white; *Membrane* somewhat iridescent, blackish, anterior margin narrowly darker; between the apex of the cuneus and the inner cell-nerve a narrow pale streak; cell-nerves reddish. *Legs; thighs* brown, with a broad ring towards the base, and a narrow one before the apex, yellowish-white, extreme apex frequently yellowish-white; *tibiæ* yellowish, basal half reddish or brownish; apex narrowly brown; *tarsi* yellow; apex of the 3rd joint, and *claws*, black.

Length, 1½ line.

An abundant species everywhere, from July to September, by beating and sweeping *Galium*, and other plants growing on hedge-banks, &c.

Genus 2.—Camptobrochis, *Fieb.*

Short, broad, oval.

Head short, vertical in front, almost twice as broad across the posterior margin as long; *Crown* convex, deflected to the clypeus, a little raised above the upper margin of the eyes; *Clypeus* convex; very little in front of, and forming a curve parallel with the anterior margin of the eyes; apex and short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe shortish, very convex, prominent; side lobes short, narrow, somewhat parallel, rounded outwardly at the apex. *Antennæ* short; about ½ the length of the body, stouter in the ♂ than the ♀, in the former thickened; 1st joint somewhat cylindrical, shorter than the head; 2nd stouter in the ♂ than in the ♀, in the former thickened to the apex, in the latter clavate, 3 times as long as the 1st; 3rd and 4th together shorter than the 2nd, 3rd about equal to the 4th. *Eyes* large, prominent; viewed from above almost hemispherical, from the side long oval. *Rostrum* reaching to the end of the mesosternum; 1st joint stout, scarcely reaching to the base of the xyphus of the prosternum.

Thorax.—Pronotum short, trapezoidal, obscurely hexagonal, 1¾ times as broad on the posterior margin as long; with a collar and 2 callosities in front, the latter joined by a short, broad, transverse keel; anterior margin constricted; sides almost straight, considerably rounded to the collar; hinder angles rounded; posterior margin convex, or slightly concave across the scutellum; disk very convex,

deflected to the head. *Scutellum* triangular, almost equilateral; raised above the clavus with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum; sides slightly convex. *Elytra* horizontal; cuneus and membrane considerably deflected; *Clavus* convex, deflected to the corium; *Corium* flattish convex; *Cuneus* triangular, the base almost equal in length to the anterior margin. *Sternum: Prosternum;* xyphus triangular; flattish convex; somewhat pointed; the sides margined; *Mesosternum* short, very broad in front, convex; posterior margin keeled, almost straight; *Metasternum* obtuse angled; somewhat prominent. *Legs; tarsi* of the 3rd pair of almost equal length.

Species 1.—CAMPTOBROCHIS PUNCTULATUS.

PHYTOCORIS PUNCTULATUS, *Fall.* Mon. Cim. 87, 58 (1807); Hem. Suec. i, 95, 36 (1829); *Meyer*, Caps. 103, 92, tab. 4, fig. 2 (1843).
CAPSUS — *H. Schf.* Nom. Ent. i, 52 (1835); *Kirschb.* Caps. 67, 70 (1855).
CAPSUS (CAPSUS) PUNCTULATUS, *Flor*, Rhyn. Liv. i, 532, 35 (1860).
CAMPTOBROCHIS — *Fieb.* Europ. Hem. 248, 2 (1861).

Brownish ochreous-yellow, deeply but remotely punctured, the punctures brown; *tibiæ* with 2 brown rings.

Head.—Crown; hinder margin yellowish-white. *Antennæ* pale brownish-yellow, apex of the 2nd joint brown. *Rostrum* brownish-yellow, tip brown.

Thorax.—Pronotum sometimes pale pitchy brown; callosities anteriorly yellowish-white, posteriorly brown. *Scutellum* pitchy brown; a central line, the basal angles, and sometimes the sides, narrowly yellowish-white. *Elytra* somewhat diaphanous; *Corium;* anterior margin yellowish; disk with a more or less large and distinct brown spot in the middle, opposite to the scutellar angle; *Cuneus* punctured; anterior margin yellowish; before the apex a broad, transverse, brown patch, not reaching across the anterior margin; base pale yellowish-white; *Membrane* very pale gray, almost transparent; cell-nerves brown. *Legs* yellowish; *thighs;* 3rd pair with a brown or black spot on the upperside, a little before the apex; *tibiæ* with 2 brown rings, one near the base, the other before the middle; frequently in the 1st pair these are indistinct or entirely

obsolete; apex very narrowly brown; *tarsi* pale brownish-yellow; apex of the 3rd joint, and *claws*, brown.

Length, $1\frac{3}{4}$ line.

Somewhat common from July to September, by beating various trees; also upon *Pteris aquilina* in woods.

Genus 3.—Liocoris, *Fieb.*

Short, oval.

Head short, vertical in front, twice as broad across the eyes as long; *Crown* convex, deflected to the base of the clypeus; *Clypeus* convex, base level with the anterior margin of the eyes, apex and short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex; side lobes short, narrow, slightly rounded outwardly. *Antennæ* shorter than the body; 1st joint somewhat cylindrical, as long as the head; 2nd thickened to the apex, $2\frac{1}{2}$ times as long as the 1st; 3rd and 4th filiform, together a little longer than the 2nd, 3rd a little longer than the 4th. *Eyes* large, prominent, viewed from above hemispherical, from the side longish oval. *Rostrum* reaching to beyond the 3rd pair of coxæ; 1st joint reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, $1\frac{1}{2}$ time as broad across the posterior margin as long, with a collar and 2 callosities in front; anterior margin straight, constricted; sides almost straight, rounded to the constriction; hinder angles short, rounded; posterior margin convex, indented in the middle; disk convex, deflected to the head. *Scutellum* convex, triangular, raised above clavus, with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum. *Elytra* horizontal, cuneus and membrane considerably deflected; *Clavus* flattish convex, deflected to the corium; *Corium* flattish convex, flat at the base between the claval suture and 1st nerve; *Cuneus* triangular, the anterior margin longer than the base. *Sternum: Prosternum;* xyphus triangular, pointed, sides convex, reflexed; *Mesosternum* short, convex, elevated posteriorly; posterior margin convex, faintly indented in the middle; *Metasternum;* centre broad, obtuse-angled, with a callosity in the centre. *Legs; tarsi* somewhat long, 2nd joint of 3rd pair a little longer than the 3rd.

Species 1.—Liocoris tripustulatus.

Lygæus tripustulatus, *Fab.* E. S. iv, 176, 145 (1797); S. R. 239, 182 (1803).
Phytocoris — *Fall.* Hem. Suec. i, 96, 38 (1829); *Hahn*, Wanz. i, 215, fig. 111 (1832); *Burm.* Handb. ii, 273, 25 (1835); *Zett.* Ins. Lap. 275, 21 (1839); *Kolen.* Mel. Ent. ii, 120, 101 (1845).
— pastinacæ, *Hahn*, Wanz. i, 213, fig. 110 (1832).
Capsus tripustulatus, *H. Schf.* Nom. Ent. i, 52 (1835); *Meyer*, Caps. 106, 96 (1843); *Sahlb.* Geoc. Fen. 113, 49 (1848); *Kirschb.* Caps. 64, 65, & 112 (1855).
Capsus (Capsus) tripustulatus, *Flor*, Rhyn. Liv. i, 515, 27 (1860).
Liocoris tripustulatus, *Fieb.* Europ. Hem. 270 (1861).

Oval. Black or brown, with yellow or orange-yellow markings.

Head.—Crown yellow, or orange-yellow; sometimes with a transverse black streak between the eyes; *Clypeus* generally with a short black or brown streak on each side of the centre; *Face;* central, and side lobes black or brown. *Antennæ* yellowish, or orange-yellow; 1st joint at the apex narrowly black, and on the underside generally with a black streak; 2nd more or less broadly brown at the base and apex; 3rd and 4th brownish, sometimes the base of the 3rd narrowly yellowish. *Rostrum* brownish yellow, tip black.

Thorax.—Pronotum yellow, or orange-yellow, finely but remotely punctured, the outer margin of the callosities and the hinder angles with a black spot; the posterior portion of the disk more or less broadly black or brown, generally divided by a yellowish, longitudinal, central line; posterior margin yellow, or orange-yellow. *Scutellum* yellow, greenish, or orange-yellow; in the middle next the transverse channel, a short, bifurcate black or brown patch. *Elytra* very finely punctured; *Clavus* black or brown, the apex more or less broadly yellow, or orange-yellow; sometimes the disk is pale-brownish, with a deeper shade in the middle, opposite to the scutellar angle; extreme apex black or brown; *Corium* black or brown, the base, and a broad band beyond the middle, yellow, or orange-yellow; sometimes the disk is pale brownish-green, or yellow, with an irregular brown band at the apex; or in black or brown examples, the band beyond the middle is substituted by a yellow or orange

streak at the anterior margin; *Cuneus* yellow, or orange-yellow, base and apex black or brown; *Membrane* brown, with a large, somewhat triangular pale patch, frequently divided longitudinally by a brown streak, in a line with the centre of the apex of the outer cell. *Legs* yellow, or reddish-yellow; *thighs* with 3 brown rings, frequently most distinct upon the 3rd pair; *tibiæ* with a black or brown spot at the base on the outside, and a ring of the same colour a little below the latter; apex narrowly brown; the somewhat spinose hairs, short, black; *tarsi* reddish-yellow, 3rd joint at the apex, black; *claws* brown.

Length 2—2¼ lines.

An abundant species everywhere on *Umbelliferæ*, nettles, &c., in July, August, and September.

Genus 4.—Orthops, *Fieb.*

Longish oval.

Head short, vertical in front, not so wide across the eyes in the ♂ as in the ♀; *Crown* convex, hinder margin between the eyes more or less distinctly keeled; *Clypeus* convex, base lower than the anterior margin of the eyes, apex and short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex; side lobes short, rounded outwardly. *Antennæ* shorter than the body; 1st joint somewhat cylindrical, about as long as the head; 2nd gradually thickened to the apex, stouter in the ♀ than the ♂, 2½ times longer than the 1st; 3rd and 4th filiform, together as long as, or longer than the 2nd; 3rd, longer than the 4th. *Eyes* large, prominent, viewed from above, hemispherical, from the side, long oval. *Rostrum* reaching to the end of the 3rd pair of coxæ; 1st joint stout, almost reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, almost twice as broad on the posterior margin as long; with a collar and 2 callosities in front; anterior margin straight, constricted; sides convex, rounded towards the constriction; hinder angles short, rounded, and slightly raised; posterior margin flattish convex, slightly indented in the middle; disk convex, deflected to the head. *Scutellum* triangular, almost equilateral, convex, raised above the clavus, with a transverse channel near the base, the basal portion concealed beneath the posterior

margin of the pronotum. *Elytra* horizontal, longer than the abdomen, deflected at the junction with the cuneus and membrane; *Clavus* convex, deflected to the corium; *Corium* flattish convex, flat at the base between the claval suture and the 1st nerve; *Cuneus* triangular, the anterior margin a little longer than the base. *Sternum: Prosternum;* xyphus triangular, sides keeled; *Mesosternum* horizontal, sides somewhat convex, above flattish, depressed posteriorly in the middle, and slightly channeled; posterior margin convex, slightly indented in the middle; *Metasternum;* middle angled, prominent, with a callosity in the centre. *Legs: tarsi;* 2nd joint of the 3rd pair somewhat longer than the 3rd.

Species 1.—Orthops Kalmii.

Cimex Kalmii, *Lin.* F. S. 948 (1761); S. N. 728, 84 (1767).
Lygæus flavovarius, *Fab.* E. S. iv, 178, 154 (1797); *Fall.* Mon. Cim. 86, 56 (1807).
Phytocoris flavovarius, *Fab.* S. R. 243, 10 (1803); *Fall.* Hem. Suec. i, 93, 34 (1829); *Hahn,* Wanz. i, 211, fig. 109 (1832); *Burm.* Handb. ii, 272, 24 (1835).
Capsus Kalmi, *H. Schf.* Nom. Ent. i, 52 (1835); *Meyer,* Caps. 105, 95 (1843); *Sahlb.* Geoc. Fen. 112, 47 (1848); *Kirschb.* Caps. 65, 68, & 113 (1855).
— transversalis, *H. Schf.* Nom. Ent. i, 52 (1835).
Phytocoris Kalmii, *Zett.* Ins. Lap. 274, 20 (1839); *Kolen.* Mel. Ent. ii, 122, 103 (1845).
Capsus (Capsus) Kalmi, *Flor,* Rhyn. Liv. i, 521, 29 (1860).
Orthops flavovarius and Kalmi, *Fieb.* Europ. Hem. 278, 6 & 7 (1861).

Yellow, or greenish-yellow, with black or brown markings; clothed with fine, short, depressed, yellow hairs; next the apex of the *corium*, a more or less distinct transverse black or brown band; *cuneus*; apex broadly black; *thighs*, 3rd pair with 2 black rings next the apex.

Head frequently black; *Crown;* posterior margin, and a line along the inside of the eyes yellow or greenish-yellow; or the head yellowish or yellowish-green, with a more or less broad black or brown streak on each side the centre, extending from between the eyes to the apex of the clypeus; *Face*, central lobe black or brown. *Antennæ;* 1st joint yellowish or brownish yellow, the base and sometimes the apex with a narrow brown ring; 2nd, piceous or

black in the middle, more or less distinctly brown; 3rd and 4th brown, base and apex of the 3rd piceous or black, extreme base yellow. *Rostrum* yellow, tip black.

Thorax.—Pronotum black, thickly and finely punctured; the collar in the centre, a more or less broad transverse band behind the callosities, and the posterior margin narrowly, yellow; or the entire disk greenish-yellow; sides yellowish; callosities brown or black; hinder angles with a black or brown spot, and frequently within the posterior margin a more or less distinct transverse brown band. *Scutellum* yellow, with a triangular black spot in the middle next the transverse channel; or black or brown, the basal angles, apex, and frequently the sides, yellow. *Elytra; Clavus* finely wrinkled transversely; inner margin piceous; disk, excepting the apex, more or less piceous or black, especially towards the inner margin; *Corium* thickly and finely punctured; anterior margin narrowly black; next the apex a more or less distinct transverse brown or black band, frequently extending to the anterior margin, its inner edge assuming a Λ-shape; *Cuneus;* apex broadly black or brown; *Membrane* gray, faintly iridescent; below the apex of the inner cell a short blackish streak joined, almost at right angles, to another proceeding from the middle of the anterior margin; cell-nerves yellow exteriorly and interiorly, at the apex margined with blackish. *Sternum* piceous or black. *Legs; coxæ* and *fulcra* yellow; *thighs* yellow; with 2 black or brown rings next the apex, the inner one broadest; frequently on the 1st and 2nd pairs the rings are wanting or replaced by 2 spots on the upper or undersides; *tibiæ* yellow, generally with a black or brown streak on the outside at the base, and with short, black, somewhat spinose hairs; apex narrowly brownish; *tarsi* yellowish; 3rd joint and *claws* black.

Length, 2—2½ lines.

A very common species everywhere on *Umbelliferæ* in May, June, July, and August.

Contrary to other authors, Dr. Fieber has separated *O. Kalmii* from *O. flavovarius*, principally because the band at the apex of the corium in the latter extends to the anterior margin, whilst in the former it does not reach it. The only other differential character appears to be the more elongate form of *O. Kalmii*, but we have no proof of their being distinct.

Species 2.—Orthops cervinus.

Capsus cervinus, *H. Schf.* Wanz. vi, 57, fig. 617 (1841); *Meyer*, Caps. 103, 91 (1843); *Kirschb.* Caps. 61, 60 (1855).
Orthops cervinus, *Fieb.* Europ. Hem. 278, 5 (1861).

Grayish-yellow, generally with a faint reddish tinge; clothed with fine, short, depressed yellow hairs. *Thighs* mostly with 2 brownish or reddish rings next the apex.

Head.—*Antennæ* greenish or yellowish; 2nd joint at the apex, and 3rd and 4th, blackish; base of the 3rd yellowish. *Rostrum* yellowish, tip brown.

Thorax.—*Pronotum* thickly and finely punctured; hinder angles generally brown. *Scutellum* frequently reddish or brownish-red; apex yellowish white, on each side of the centre a longitudinal blackish streak joined together next the transverse channel. *Elytra*: *Clavus;* inner margin as far as the apex of the scutellar angle, and the apex narrowly blackish. *Corium;* anterior margin narrowly blackish; disk at the apex thickly spotted with brown or reddish, more or less confluent; *Cuneus* pale yellowish or grayish-yellow; apex brown or red; *Membrane* pale gray, iridescent; below the apex of the cuneus a blackish streak and another curved one extending from below the apex of the outer cell to the middle of the anterior margin, the latter streak is generally divided in the centre; cell-nerves yellowish; apex of the cells blackish. *Sternum* yellowish. *Legs* yellowish; *thighs*, 3rd pair with 2 red or brownish rings next the apex; *tibiæ* with short, somewhat spinose, brown hairs; apex frequently narrowly pale brownish or reddish; *tarsi* yellowish; 3rd joint brown; *claws* red-brown.

Abdomen yellowish underneath.

Length, 2 lines.

Very abundant from July to September by sweeping and beating herbage. It has occurred at Mickleham, Strood, and other places in the London District. Scarborough (*Wilkinson*).

Species 3.—Orthops pastinacæ.

Lygæus pastinacæ, *Fall.* Mon. Cim. 86, 57 (1807).
Phytocoris pastinacæ, *Fall.* Hem. Suec. i, 94, 35 (1829).
Capsus — *Sahlb.* Geoc. Fen. 113, 48 (1848).
— lucidus *Kirschb.* Caps. 68, 71, & pp. 113 & 131 (1855).
— (Capsus) pastinacæ, *Flor,* Rhyn. Liv. i, 523, 30 (1860).
Orthops pastinacæ, *Fieb.* Europ. Hem. 278, 3 (1861).

Bluish or yellowish-green; clothed with short, fine, depressed, yellow hairs; *thighs;* 3rd pair without black or brown rings, rarely with 2 spots on the upperside.

Head.—Antennæ; 1st joint green, the base and apex, or the apex only, narrowly brown; 2nd brownish-yellow, apex and 3rd and 4th joints brown. *Rostrum* greenish or yellowish-green; tip piceous.

Thorax.—Pronotum thickly and deeply punctured; callosities pale brownish-yellow, their hinder margins brown, rarely with a small round brown spot at the hinder angles. *Scutellum* yellowish-green, finely wrinkled transversely. *Elytra: Clavus;* inner margin pitchy black; disk pale brownish, more or less piceous between the scutellar angle and the apex; *Corium;* anterior margin bluish or yellowish-green; at the apex, between the 1st nerve and the inner margin, a large brown spot; *Cuneus* green, somewhat paler at the base; *Membrane* iridescent, almost transparent; below the apex of the outer cell a narrow, longitudinal, pale-brown streak, extending to the apex of the anterior margin; cell-nerves greenish-yellow. *Sternum;* centre pitchy black. *Legs* bluish or yellowish-green; *thighs;* 3rd pair rarely with 2 brown spots on the upperside next the apex; *tibiæ* narrowly brown at the apex, with short, stout, somewhat spinose, black hairs; 1st pair at the base generally with a short, brown streak down the outside; *tarsi* brownish-yellow; apex of the 3rd joint, and *claws,* black.

Abdomen; upperside black; *connexivum* bluish or yellowish-green; underside bluish or yellowish-green.

Length, 1¾—2 lines.

A common species, from May to September, by beating or sweeping herbage. It has been taken at Mickleham, Strood, Sanderstead, and other places in the London district. Scarborough (*Wilkinson*).

This insect rarely retains its colour after death, and generally changes to yellow, grayish, or pale brownish-yellow.

Genus 5.—Lygus, *Hahn.*

Elongate, more or less oval.

Head vertical in front, broader across the eyes than long; *Crown* convex, deflected to the base of the clypeus, which is a little in front of the eyes; *Clypeus* convex; apex slightly produced, and with the short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, broad, convex, a little produced; side lobes short, triangular, rounded outwardly. *Antennæ* as long, or almost as long, as the body; 1st joint cylindrical, longer than the head; 2nd, $2\frac{3}{4}$ to 3 times as long as the 1st; somewhat clavate; 3rd and 4th filiform, together almost as long as the 2nd, 4th about $\frac{2}{3}$rds the length of the 3rd. *Eyes* large; viewed from above somewhat hemispherical; from the side, long oval. *Rostrum* reaching to beyond the 3rd pair of coxæ; 1st joint stout, free, reaching almost to the end of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform; $1\frac{1}{2}$ time as broad as long, with a collar and 2 callosities in front, the latter frequently joined anteriorly by a short, transverse keel; anterior margin straight, angles acute; sides straight; hinder angles short, rounded, generally raised; posterior margin convex; disk convex, deflected to the head. *Scutellum* triangular, convex, raised above the clavus, and with a transverse channel near the base; the basal portion generally concealed beneath the posterior margin of the pronotum. *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex; horizontal as far as the junction with the cuneus and membrane, which are deflected; anterior margin flat; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus long, narrow, triangular; *Mesosternum* horizontal, with a central channel; sides convex; posterior margin convex, notched in the middle; *Metasternum;* in the middle convex; broad; angle short; prominent. *Legs; tarsi* long; 3rd joint of the 3rd pair as long as the 2nd.

Species 1.—LYGUS PABULINUS.

CIMEX PABULINUS, *Lin.* F. S. 974 (1761); S. N. 727, 83 (1767).
MIRIS — *Fab.* S. R. 254, 5 (1803).
PHYTOCORIS PABULINUS, *Fall.* Hem. Suec. i, 79, 4 (1829); *Zett.* Ins. Lap. 272, 2 (1839).
CAPSUS AFFINIS, *Meyer,* Caps. 48, 6, tab. i, fig. 5 (1843).
PHYTOCORIS AFFINIS, *Kolen.* Mel. Ent. ii, 116, 93 (1845).
CAPSUS PABULINUS, *Sahlb.* Geoc. Fen. 101, 21 (1848); *Kirschb.* Caps. 57, 52 (1855).
CAPSUS (CAPSUS) PABULINUS, *Flor,* Rhyn. Liv. i, 507, 22 (1860).
LYGUS PABULINUS, *Fieb.* Europ. Hem. 276, 10 (1861).

Elongate, somewhat oval.

Pale green or greenish-yellow, clothed with fine, short, depressed, white hairs.

Head.—Antennæ as long as the body, green or greenish-yellow; apex of the 2nd joint, and 3rd and 4th, brown. *Eyes* black. *Rostrum* greenish, tip brown.

Thorax.—Pronotum; callosities joined in front by a short transverse keel; disk thickly and finely punctured. *Scutellum;* basal portion coarsely, hinder portion finely, wrinkled transversely. *Elytra: Clavus* and *Corium* finely punctured; *Membrane* pale fuscous, iridescent; between the apex of the cuneus and inner cell-nerve a somewhat curved streak, and below the cells a longitudinal streak, brown; inner marginal nerve brownish-yellow at the base; cell-nerves green; apex of the outer cell generally with a small brown spot. *Sternum* green. *Legs* greenish-yellow; *tibiæ* with fine, short, somewhat spinose, yellowish hairs; *tarsi* brown; 3rd joint blackish; *claws* brownish-yellow.

Abdomen; upper and underside green.

Length, $2\frac{3}{4}$—3 lines.

An abundant species from June to September, on bushes generally, and by sweeping amongst grass, &c. It has occurred at Sanderstead, Tunbridge Wells, and other places in the London district. New Forest (*Marshall*).

Species 2.—Lygus lucorum.

Capsus lucorum, *Meyer*, Caps. 46, 3, tab. 6, fig. 2 (1843).
— contaminatus, *Kirschb.* Caps. 65, 66 (1855).
Lygus lucorum, *Fieb.* Europ. Hem. 275, 9 (1861).

Bluish or yellowish-green, clothed with very fine, depressed, pale yellowish-white hairs. *Tibiæ;* 3rd pair bent, and with short, somewhat spinose, black hairs.

Head.—*Antennæ* yellowish or greenish-yellow; apex of the 2nd joint, and 3rd and 4th, brown; 3rd at the base narrowly pale. *Eyes* black. *Rostrum* yellowish or greenish-yellow, tip piceous.

Thorax.—*Pronotum* thickly punctured, and somewhat finely wrinkled transversely; disk frequently with 2 to 4 blackish, longitudinal spots. *Scutellum* wrinkled transversely, somewhat depressed in the centre next the transverse channel. *Elytra* somewhat diaphanous, thickly punctured and finely wrinkled transversely; near the base and between the 1st nerve and claval suture frequently a short brown streak; *Cuneus;* basal inner angle generally with a small brown spot; *Membrane* pale; between the apex of the cuneus and the inner cell-nerve a curved, brown streak, and below the apex of the outer cell-nerve a longitudinal, brown streak; inner marginal nerve piceous at the base; cell-nerves whitish, outer cell-nerve exteriorly margined with brown; cells yellowish-brown, their apex brown. *Sternum* greenish. *Legs* greenish or yellowish-green; *tibiæ;* 3rd pair bent, and with short, somewhat spinose, black hairs; *tarsi* yellowish; apex of the 3rd pair brown; *claws* brownish-yellow.

Abdomen; upper and underside greenish.

Length, 2½ lines.

Apparently somewhat scarce. A few specimens have been taken at West Cowes, Isle of Wight, on *Eupatoria cannabinum*, in September.

Species 2.—Lygus Spinolæ.

Capsus Spinolæ, *Meyer*, Stett. Ent. Zeit. 86 (1841); Caps. 45, 2, tab. 1, fig. 2 (1843).
Lygus — *Fieb.* Europ. Hem. 275, 8 (1861).

Bluish-green, somewhat shining, clothed with very fine, short, depressed, pale yellowish-white hairs. *Cuneus;* apex narrowly black; *tibiæ;* 3rd pair bent a little below the base, and with short, spinose, black hairs.

Head.—Antennæ shorter than the body, greenish or yellowish-green; apex of the 2nd joint, and 3rd and 4th, brown. *Face;* central lobe black. *Eyes* black. *Rostrum* greenish-yellow, tip piceous.

Thorax.—Pronotum finely crenate-punctate. *Scutellum* finely wrinkled transversely, slightly depressed in the centre next the transverse channel. *Elytra* somewhat diaphanous; *Clavus* and *Corium* thickly and finely punctured, almost wrinkled transversely; *Cuneus;* apex narrowly black; *Membrane* pale fuscous, iridescent; between the apex of the cuneus and the inner cell-nerve a brown spot; next the apex of the anterior margin a large triangular brown patch, and below the apex of the outer cell a short brown streak; inner marginal nerve pitchy brown; cell-nerves greenish-yellow; apex of both cells brown. *Sternum* greenish-yellow. *Legs* greenish-yellow; *thighs;* 2nd pair, sometimes, and 3rd, with 2 brown rings before the apex; *tibiæ;* 3rd pair bent a little below the base, with short, spinose, black hairs; apex narrowly brownish; *tarsi* yellowish; 3rd joint and *claws* black.

Abdomen; underside greenish-yellow, clothed with fine, pale, golden-yellow hairs; sides with a more or less defined, broad, brown streak.

Length, 2½ lines.

This species has occurred, though sparingly, at Eltham, on brambles in August. Dr. Power and Mr. Crotch have also met with it.

Species 4.—Lygus sulcifrons.

Capsus sulcifrons, *Kirschb,* Caps. 130, 7, & 183, 56*a* (1855).

Elongate.

Greenish or yellowish-green, clothed with very fine, short, depressed, pale yellowish-white hairs. *Crown* with a longitudinal channel; *tibiæ* slightly bent a little below the base, and with small black spots, and brownish-yellow spinose hairs.

Head.—*Crown* with a longitudinal channel, deepest between the eyes, and generally reaching to the apex of the clypeus. *Antennæ* greenish, or yellowish-green; apex of the 2nd joint, and 3rd and 4th entirely, brown, base of the 3rd narrowly pale. *Eyes* black, in the ♂ larger than in the ♀, and their inner margins considerably more approximate. *Rostrum* yellowish-green, tip black.

Thorax.—*Pronotum* somewhat coarsely wrinkled transversely. *Scutellum* finely wrinkled transversely, depressed in the centre next the transverse channel. *Elytra* somewhat diaphanous; *Clavus;* inner margin very narrowly pale brownish-yellow; disk finely wrinkled transversely; *Corium* finely wrinkled transversely; apical inner angle, with a small brown spot, wanting in the ♀; *Cuneus;* apex very narrowly fringed with black hairs; *Membrane* blackish, iridescent; between the apex of the cuneus and the inner cell-nerve a somewhat triangular black patch, immediately followed by a large, oval, yellowish one, in the middle of which, at the anterior margin, is a lunate blackish patch; below the apex of the cells a large, somewhat triangular, black patch, its apex extending into the broadly black apical margin; exterior margin of the cells narrowly pale; inner marginal nerve brown at the base; cell-nerves yellowish; cells yellowish; base of the outer cell in the ♂ and apex of both broadly black. *Sternum* greenish-yellow. *Legs* greenish or greenish-yellow; *thighs;* 3rd pair with 2 blackish bands before the apex, and a few irregularly disposed black spots along the underside; *tibiæ* slightly bent a little below the base, with small black spots, and brownish-yellow spinose hairs; *tarsi* yellowish; 3rd joint, sometimes the apex only, black; *claws* brownish-yellow.

Abdomen; upperside green, the centre more or less broadly brown; underside greenish-yellow, clothed with fine yellowish-white hairs.

Length, $2\frac{3}{4}$—3 lines.

Kirschbaum's description has been drawn up from a single ♂, and Fieber in the appendix to the 'Europ. Hem.,' p. 392 says, that it is synonymous with *L. contaminatus*. We have, however, several examples, and they all accord with Kirschbaum's description, and possess many points of difference sufficient to separate them from that species. The principal differences are its narrower form, the closer proximity of the eyes in the ♂, the entirely greenish or greenish-yellow clavus, the black patch in the outer cell of the membrane, extending along the outer margin nearly to the base, which

last is frequently black, and the triangular, black patch, below the apex of the cells.

It has occurred at Darenth, Dartford, Shirley, Mickleham, &c., on birches, in June and July.

Species 5.—LYGUS CONTAMINATUS.

LYGÆUS CONTAMINATUS, *Fall.* Mon. Cim. 76, 29 (1807).
PHYTOCORIS CONTAMINATUS, *Fall.* Hem. Suec. i, 79, 5 (1829).
LYGUS — *Hahn*, Wanz. i, 151, fig. 76, (1832); *Fieb.* Europ. Hem. 272, 5 (1861).
CAPSUS — *Meyer*, Caps. 45, 1 (1843); *Kirschb.* Caps. 64, 66, & 184 (1855).
CAPSUS (CAPSUS) CONTAMINATUS, *Flor*, Rhyn. Liv. i, 531, 34 (1860).

Elongate. Greenish or greenish-yellow, clothed with very fine, depressed, pale yellowish-white hairs; *tibiæ* slightly bent a little below the base, with minute brown spots, and brownish-yellow, spinose hairs.

Head.—Antennæ yellowish or greenish-yellow; 2nd joint at the apex brownish; 3rd and 4th brown, the former narrowly pale at the base. *Eyes* brown-black. *Rostrum* greenish-yellow; tip brown.

Thorax.—Pronotum thickly and very finely punctured and wrinkled transversely; within the posterior margin frequently more or less broadly brownish. *Scutellum* yellow or green, finely wrinkled transversely. *Elytra: Clavus* transversely wrinkled; brownish-yellow or brown, somewhat piceous towards and at the scutellar angle; *Corium* somewhat shagreened, with a transverse brown patch at the apex, between the 1st and 2nd nerves; *Cuneus* green; *Membrane* pale fuscous-brown, iridescent; between the apex of the cuneus and the inner cell-nerve a brown streak, and a second lying parallel to and midway between it and the apex of the anterior margin; inner marginal nerve brownish at the base; cell-nerves greenish or greenish-yellow; apex of the outer cell brown. *Sternum* greenish or yellowish-green. *Legs* greenish or greenish-yellow; *thighs* with 2 brown rings before the apex; *tibiæ* slightly bent below the base, with minute brown spots, and short, brownish-yellow, spinose hairs; apex generally brownish; *tarsi* yellowish; 3rd joint and *claws* black.

Abdomen; upperside brown; underside greenish or greenish-yellow, clothed with fine, pale yellowish-white hairs.

Length, 2¾—3 lines.

An abundant species, in July and August, by beating various bushes and trees, and also by sweeping. It has been taken at Croydon, Shirley, Darenth, Mickleham, Esher, &c.

Species 6.—Lygus rubricatus.

Lygæus rubricatus, *Fall.* Mon. Cim. 91, 70 (1807).
Phytocoris rubricatus, *Fall.* Hem. Suec. i, 100, 45 (1829); *Zett.* Ins. Lap. 275, 27 (1839).
Lygus — *Hahn,* Wanz. i, 156, fig. 80 (1832); *Fieb.* Europ. Hem. 274, 3 (1861).
Capsus rubicundus, *Meyer,* Caps. 72, 44 (1843).
— rubricatus, *Sahlb.* Geoc. Fen. 106, 34 (1848); *Kirschb.* Caps. 58, 55, & 111, 55 (1855).
— (Capsus) rubricatus, *Flor,* Rhyn. Liv. i, 526, 32 (1860).

Short, slightly oval; reddish or brownish-yellow, clothed with fine, short, depressed, pale yellowish-white hairs; *tibiæ* straight, unspotted.

Head.—Antennæ yellowish or reddish-yellow; apex of the 2nd joint sometimes, and 3rd and 4th, brownish. *Eyes* black or brown. *Rostrum* yellowish, tip black.

Thorax.—Pronotum deeply and thickly punctured; sometimes the entire disk is piceous, the anterior and posterior margins, and a V-shaped patch between the callosities, reddish-yellow or yellowish. *Scutellum* faintly wrinkled transversely; brownish-yellow, yellowish, or brownish; in the latter case, the apex is narrowly yellowish. *Elytra* somewhat diaphanous; *Clavus* very thickly and minutely punctured; inner margin, in brownish-yellow examples, between the scutellar angle and the apex, brown; apex of the nerve narrowly brown; *Corium* very thickly and minutely punctured; anterior margin in brownish-yellow examples, brown-red; within the bifurcation of the first nerve at the apex, a brown spot; *Cuneus* reddish-yellow; apex and inner basal angle frequently red or brownish-red, or the former brown; *Membrane* pale piceous, iridescent; between the apex of the cuneus and the inner cell-nerve, a narrow blackish streak, and a little below this, on the anterior margin, a triangular blackish patch, its apex at the apex of the outer cell-nerve; inner marginal nerve at the base brown; cell-nerves reddish or reddish-yellow; apex of both cells blackish. *Legs* yellowish; *thighs;* 3rd pair, and sometimes the 2nd, at the apex broadly red, the former

with a few minute, brownish-red spots; *tibiæ* with short, somewhat spinose, yellowish hairs; *tarsi* yellowish; 3rd joint black; *claws* brown.

Abdomen; underside brown, clothed with fine, pale, yellowish-white hairs; sides with a broad red streak; genital segments red or yellowish.

Length, 2 lines.

Not an uncommon species at Shirley, on *Pinus sylvestris*, in August.

Species 7.—Lygus campestris.

Cimex campestris, *Lin.* F. S. 950 (1761); S. N. 728, 87 (1767).
Lygæus — *Fab.* Mantiss. ii, 303, 246 (1787); E. S. iv, 171, 125 (1794); S. R. 234, 154 (1803).
Phytocoris campestris, *Fall.* Hem. Suec. i, 91, 29 (1829); *Hahn,* Wanz. i, 218, fig. 113 (1832); *Zett.* Ins. Lap. 273, 13 (1839); *Kolen.* Mel. Ent. ii, 118, 97 (1845).
Capsus — *Sahlb.* Geoc. Fen. 111, 44 (1848); *Kirschb.* Caps. 65, 67 (1855).
Capsus (Capsus) pratensis (in pars) *Flor,* Rhyn. Liv. i, 517, 28 (1860).
Lygus campestris, *Fieb.* Europ. Hem. 273, 2 (1861).

Oval. Grayish-green, grayish-yellow, or brown-reddish, thickly clothed with long, silky, depressed, pale yellowish hairs; *thighs* with 2 brown or red-brown rings near the apex.

Head.—Antennæ yellowish; 3rd and 4th joints brownish, 3rd pale at the base. *Eyes* black or brown-black. *Rostrum* yellow, tip black.

Thorax.—Pronotum deeply and irregularly punctured; greenish, brownish, or reddish-brown; in front to beyond the callosities greenish-yellow or yellowish. *Scutellum* green, punctured, and wrinkled transversely; towards and at the transverse channel yellowish or brownish-yellow, with a short, black streak on each side of the centre; apex narrowly pale. *Elytra: Clavus;* inner margin piceous, slightly broadest at the base; disk thickly and coarsely punctured, the centre more or less clouded with brown; *Corium;* anterior margin narrowly black; disk thickly and somewhat coarsely punctured; between the 1st nerve and the claval suture more or less

spotted with brown, the spots of irregular form, and sometimes confluent towards the apex, which has frequently a reddish tinge; *Cuneus;* anterior margin narrowly blackish or brownish; apex narrowly, and generally a short streak at the basal inner angle, brown; *Membrane* brownish fuscous, faintly iridescent; between the apex of the cuneus and the inner cell-nerve a brown patch; below the apex of the outer cell-nerve, and extending to the apex of the anterior margin, a curved streak, enclosing a pale patch; disk below the outer cell broadly pale; inner marginal nerve brown at the base; cell-nerves whitish or yellowish-white; exterior margin of the outer cell-nerve pale; apex of both cells blackish. *Legs* brownish-yellow; *thighs* with 2 brown or red-brown rings near the apex; *tibiæ* yellowish, with short, somewhat spinose, brown hairs; near the base on the upperside a brown spot; apex generally brownish; *tarsi* pale brownish-yellow; 3rd joint, sometimes the apex only, and *claws* black.

Abdomen: upperside black; *connexivum* yellow, margin broadly black, or entirely green; underside greenish, or yellowish-green, or brown, clothed with short, pale yellowish hairs; sides broadly reddish-yellow; margin of the *connexivum* narrowly black.

Length, 2¾—3 lines.

This is a most variable species, and closely allied to *L. pratensis.* Dr. Flor, contrary to other authors, considers them identical, and has so described them; but the latter species is larger, and has the apex of the cuneus generally broadly black.

It is abundant on the blossoms of furze, &c., at the roots of heath, and below fallen leaves, in April and September, and has occurred at Darenth, Coombe Wood, Plumstead, &c. Many examples hybernate.

Species 8.—LYGUS PRATENSIS.

CIMEX PRATENSIS, *Lin.* F. S. 949 (1761); *Scop.* Ent. Carn. 133, 386 (1763); *Lin.* S. N. 728, 86 (1767).

LYGÆUS — *Fab.* E. S. iv, 171, 126 (1767); S. R. 234, 155 (1803); *Fall.* Mon. Cim. 83, 50 (1807).

— UMBELLATORUM, *Panz.* F. G. 93, 19 (1805).

PHYTOCORIS PRATENSIS, *Fall.* Hem. Suec. i, 90, 28 (1829); *Hahn,* Wanz. i, 217, fig. 112 (1832); *Zett.* Ins. Lap. 273. 12 (1839); *Kolen.* Mel. Ent. ii, 119, 99 (1845).

CAPSUS GEMELLATUS, *H. Schf.* Wanz. iii, 81, fig. 301 (1835); *Kirschb.* Caps, 64, 63, & 112 (1855).

PHYTOCORIS ALPINA, *Kolen.* Mel. Ent. ii, 20, 100, tab. 10, fig. 24 (1845).
CAPSUS PRATENSIS. *Suhlb.* Geoc. Fen. 111, 43 (1848); *Kirschb.* Caps. 64, 64, & 112 (1855).
CAPSUS (CAPSUS) PRATENSIS (in pars), *Flor,* Rhyn. Liv. i, 517, 28 (1860).
LYGUS PRATENSIS, *Fieb.* Europ. Hem. 273, 1, & 391 (1861).

Oval, shining. Gray-greenish, brownish-yellow, or reddish-brown, sparingly clothed with short, silky, depressed, pale-yellowish hairs. *Cuneus;* apex generally broadly black. *Thighs* with 2 brown or red-brown rings near the apex.

Head.—Clypeus; side lobes sometimes blackish; *Face;* central lobe sometimes with a longitudinal black streak. *Antennæ* reddish-yellow or yellowish; 1st and 2nd joints at the base sometimes narrowly brown, 2nd at the apex broadly brown, extreme base pale; 3rd and 4th brown, base of the 3rd generally narrowly reddish-yellow or yellowish. *Eyes* brown. *Rostrum* reddish or brownish, extreme base on the upperside generally, and tip black.

Thorax.—Pronotum deeply and irregularly punctured, gray-greenish, yellowish-brown or reddish-brown; in front, to beyond the callosities, pale-yellowish or pale brownish-yellow; callosities sometimes margined in front with brown, and with a black puncture at the inner angle of their posterior margin; sides frequently pale; hinder angles sometimes black. *Scutellum* yellowish-white or yellow, punctured and wrinkled transversely; in the centre, next the transverse channel, a short, broad, black streak, frequently furcate at the apex, sometimes with a reddish or brownish streak along the sides; extreme apex generally pale. *Elytra: Clavus;* anterior margin black to beyond the scutellar angle, from thence to the apex brownish, in brown-reddish examples, yellowish-brown; nerve pale; disk deeply punctured; *Corium;* anterior margin narrowly black; apex with a more or less broad, transverse, wavy, red or black band, terminating before it reaches the inner posterior angle; disk thickly and somewhat deeply punctured, deepest near the base; *Cuneus;* inner margin red, apex sometimes brownish, or inner margin pale, outer basal angle and apex broadly black; *Membrane* pale fuscous, apical margin broadly darker; sometimes between the apex of the cuneus and the inner cell-nerve a triangular blackish patch; cell-nerves whitish or red. *Legs* greenish-yellow, yellowish, or reddish-yellow; *thighs* with 2 brown or red-brown rings before the apex; apex nar-

rowly brown; *tibiæ* with short, somewhat spinose, black hairs; apex narrowly brown; *tarsi* yellow; 1st joint sometimes brownish or brownish-yellow; 3rd at the apex, and *claws*, black.

Abdomen.—Underside brown or black in the middle; sides yellowish or reddish-yellow, or entirely pale greenish, clothed with fine, pale-yellowish hairs.

Length, 3—3¼ lines.

Not an uncommon species by sweeping flowers in woods, in July and August. It has been taken at Cobham Park, Tunbridge Wells, &c.

Genus 6.—Pœciloscytus, *Fieb.*

♂ Elongate, slightly oval; ♀ more robust, oval.

Head short, vertical in front, almost twice as broad across the eyes as long; hinder margin not keeled between the eyes; *Crown* flatter in the ♂ than the ♀, deflected to the base of the clypeus; *Clypeus* convex; base in the ♂ lower than the anterior margin of the eyes, in the ♀ level with it; apex in the ♀ a little more prominent than in the ♂; the short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, convex, somewhat pointed; side lobes short, narrowish, rounded outwardly. *Antennæ* shorter than the body; 1st joint cylindrical, as long as the head; 2nd gradually thickened to the apex, 3½ times as long as the 1st; 3rd and 4th filiform, together as long as the 2nd, 3rd equal to the 4th. *Eyes* large, prominent, more so in the ♂ than in the ♀, viewed from above hemispherical, from the side long oval. *Rostrum* free, reaching almost to the 2nd pair of coxæ; 1st joint stout, reaching to the middle of the xyphus of the prosternum.

Thorax.—*Pronotum* trapeziform, twice as broad on the posterior margin as long, with a collar and 2 somewhat indistinct callosities in front; anterior margin constricted; sides almost straight; hinder angles short, rounded, slightly raised; posterior margin convex; disk convex, deflected to the head. *Scutellum* triangular, equilateral, very convex, and considerably raised above the clavus with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum. *Elytra* horizontal in the ♂, considerably longer than the abdomen, in the ♀ elevated posteriorly, as long as the abdomen; cuneus and membrane

deflected, the latter frequently abbreviated; *Clavus* convex, deflected to the corium; *Corium* in the ♂ almost flat, in the ♀ convex; *Cuneus* triangular, longer in the ♂ than in the ♀. *Sternum: Prosternum;* xyphus triangular; *Mesosternum* convex, with a faint channel in the centre, anteriorly compressed into a triangle; posterior margin convex, distinctly keeled, indented in the middle *Metasternum;* centre small, with a callosity in the middle.

Species 1.—Pœciloscytus unifasciatus.

Lygæus unifasciatus, *Fab.* E. S. iv, 178, 153 (1794).
Capsus — *Fab.* S. R. 243, 9 (1803); *H. Schf.* Nom. Ent. i, 51 (1835); *Meyer*, Caps. 104, 93 (1843); *Sahlb.* Geoc. Fen. 108, 39 (1848); *Kirschb.* Caps. 61, 59, & p. 112 (1855).
Miris semiflavus, *Wolff*, Ic. Cim. 154, tab. 15, fig. 148, *a*, *b* (1804).
Phytocoris semiflavus, *Fall.* Hem. Suec. i, 86, 21, (1829); *Hahn*, Wanz. i, 208, fig. 107 (1832).
— lateralis & marginatus, *Hahn*, Wanz. ii, 85, figs. 169 & 170 (1834).
— unifasciatus, *Kolen.* Mel. Ent. ii, 123, 105 (1857).
Capsus (Capsus) unifasciatus, *Flor*, Rhyn. Liv. i, 544, 42 (1860).
Pœciloscytus — *Fieb.* Europ. Hem. 276, 1 (1861).

♂ Elongate; ♀ robust, oval. Black with yellow markings, clothed with fine, depressed, golden yellow hairs. *Cuneus* bright red, on the anterior margin a somewhat half oval black patch. ♀ with abbreviated elytra.

Head black; *Crown* with a yellow spot on the inner margin of each eye. *Antennæ* yellowish; apex of the 2nd joint, and 3rd and 4th, black. *Rostrum* brown, tip black.

Thorax.—Pronotum black, thickly and finely punctured, and faintly wrinkled transversely; posterior margin yellow. *Scutellum* finely wrinkled transversely, apex yellow. *Elytra* of the ♂ longer than the ♀, in the latter barely covering the abdomen; *Clavus* black; *Corium* black; anterior margin yellow; basal half of the disk yellow, toothed at its apex; between the 2nd nerve, and the apex of the clavus, a triangular yellow patch, or the space between the 2nd nerve and the claval suture yellow, and the apex between the bifurcation of the 1st nerve yellow; *Cuneus* bright red, on the

anterior margin a somewhat half oval black patch; base, and apex, narrowly yellow; *Membrane* black; the cells exteriorly more or less broadly margined with pale yellowish; inner marginal nerve black; cell-nerves yellow; cells pale yellowish, the inner margin of the outer and the inner cell black. *Sternum* black. *Legs; coxæ* and *fulcra* black, the latter yellow on the upperside; *thighs* brown or black, more or less red at the apex, sometimes spotted; 3rd pair next the base with a broad yellow ring; *tibiæ* yellowish, with stout, somewhat spinose, black hairs; apex of all the pairs, and base of the 3rd, brown or black; *tarsi* brownish yellow; 1st joint brown; 3rd, sometimes the apex of the 2nd, and *claws*, black.

Abdomen; upper and underside black; margin of the *connexivum* yellow.

Length, ♂ 3—3¼; ♀, 2½ lines.

Somewhat common. It has occurred at Lee, Mickleham, Cowley, Folkestone, in June, July, and August.

Family 15.—HARPOCERIDÆ.

Genus 1.—Harpocera, *Curt.*

♂ Elongate, somewhat parallel; ♀ broad, slightly oval.

Head vertical in front, broader across the eyes than long; *Crown* convex, slightly deflected to the base of the clypeus, which is almost in a line with the anterior margin of the eyes; *Clypeus* convex; *Face;* central lobe broad, convex, prominent; side lobes short, narrow, somewhat parallel; antenniferous processes in a line with the middle of the lower half of the eyes. *Antennæ* shorter than the body; 1st joint longer than the head, stouter in the ♂ than in the ♀, somewhat cylindrical, and narrowed towards the apex; 2nd in the ♂, ½ as long as the 3rd; on the underside, at the apex, produced into a flattish triangular lobe; in the ♀, nearly ¾ the length of the 2nd, thickened at the apex, but not produced into a lobe; 3rd straight in the ♂, curved in the ♀; 4th as long as the 1st. *Eyes* large, viewed from above almost hemispherical; from the side long oval. *Rostrum* reaching to the end of the mesosternum; 1st joint reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, with 2 callosities in front, 1¾ time as broad on the posterior margin as long; anterior margin straight, angles rounded; sides concave; hinder angles rounded;

posterior margin concave across the scutellum, rounded towards and at the hinder angles; disk convex, deflected to the head. *Scutellum* convex, triangular, almost equilateral, raised above the clavus, with a transverse channel near the base; *Elytra* longer than the abdomen; *Clavus* convex, deflected to the corium; *Corium* flattish convex, flat at the base, horizontal as far as the junction with the cuneus and membrane, which are deflected; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus longish triangular; anteriorly somewhat foveolate; *Mesosternum* convex, with a central channel; posterior margin convex, indented in the middle; *Metasternum* with a callosity in the centre. *Legs: tibiæ;* 1st and 3rd pairs of the ♂ (especially the 1st) much bent before the apex; in the ♀ straight; *tarsi;* 2nd joint longer than the 3rd; 1st about ½ the length of the 3rd.

Species 1.—HARPOCERA THORACICA.

LYGÆUS THORACICUS, *Fall.* Mon. Cim. 81, 45 (1807).
PHYTOCORIS THORACICUS, *Fall.* Hem. Succ. i, 111, 66 (1829).
HARPOCERA BURMEISTERI, *Curt.* B. E. xv, p. and pl. 709 (1838).
CAPSUS CURVIPES, *Meyer*, Caps. 98, 86, tab. 5, fig. 3 ♂ (1843).
— THORACICUS, *Meyer*, Caps. 102, 90, tab. 6, fig. 5 ♀ (1843); *Kirschb.* Caps. 73, 82 (1855).
— ANTENNATUS, *Muls.* Ann. Soc. Lin. 130 (1852).
HARPOCERA THORACICA, *Fieb.* Europ. Hem. 296 (1861).

♂ Brownish-yellow, clothed with fine, somewhat erect, yellowish hairs.

Head black; *Crown;* hinder margin in the middle, yellowish; *Face;* central lobe with a broad pale streak down the middle; side lobes yellowish. *Antennæ;* 1st joint piceous; 2nd brown, apex reddish-yellow; 3rd brown; 4th black. *Eyes* brown. *Rostrum* yellowish, tip black.

Thorax.—Pronotum black, shining; posterior margin narrowly reddish-yellow; disk very finely wrinkled transversely, with a broadish yellow central streak extending from behind the callosities to the posterior margin. *Scutellum* black, apex broadly reddish. *Elytra: Clavus;* inner margin black; disk piceous; nerve brownish-yellow, palest at the apex; claval suture yellowish-white; *Corium;* anterior margin brown, within the apex a somewhat triangular, yellowish patch; disk pale pitchy brown; base and 1st nerve pale brownish-yellow; *Cuneus* black; base yellowish-white; *Membrane* pale fuscous, the inner margin broadly pale, and a triangular patch

between the apex of the cuneus and the inner cell-nerve, separated by a transverse brownish pale line; inner marginal nerve brown; cell-nerves whitish; base of the outer cell pale. *Sternum* black; sides of the *prosternum* and posterior margin of the *mesosternum* frequently reddish-yellow. *Legs; coxæ* and *fulcra* yellowish or yellowish-white; *thighs* clothed with somewhat erect, yellowish hairs; 1st and 2nd pairs reddish-yellow towards the apex, with one or two longitudinal rows of black spots; base on the upper side narrowly black or brown; 3rd, apical half black; *tibiæ* yellow, with black spots and short, stout, spinose, black hairs; base and apex blackish; *tarsi* and *claws* black.

Abdomen underneath brownish-yellow; base, a streak along the sides, and the genital segments black.

Length, 3 lines.

♀ Pale brownish-yellow, clothed with fine, somewhat erect, yellowish hairs.

Head yellow; *Crown* with 2 large, somewhat oval, black patches joined to the posterior margin of the eyes, and almost reaching to the apex of the clypeus; *Face* yellowish; central lobe at the base, and a short streak on each side, black. *Antennæ* sparingly clothed with long, erect, fine, brown hairs; 1st joint brown, darkest at the base, and with a few minute black spots; 2nd yellowish, apex, and frequently the base, narrowly brown, spotted with black; 3rd piceous or black, generally with a narrow yellowish ring near the base; 4th black. *Eyes* brown-black. *Rostrum* yellowish, tip black.

Thorax.—Pronotum; anterior margin, a line down the centre, and the posterior margin, narrowly yellowish, or reddish-yellow; sides broadly yellowish or reddish-yellow; callosities broadly and irregularly margined with black; disk punctured and wrinkled transversely. *Scutellum* black; sides and apex broadly reddish, with a paler central line nearly extending from the transverse channel to the narrowly yellow apex; or the apex broadly yellowish, central line paler. *Elytra: Clavus;* inner margin narrowly black; *Corium;* anterior margin narrowly brown, apex next the inner basal angle of the cuneus with a brown spot or short transverse streak; *Cuneus* broadly brown or black, base pale; *Membrane* pale fuscous, with a large brownish patch at the apex; inner marginal nerve brown; cell-nerves and cells as in the ♂, frequently the outer cell-nerve is narrowly margined with brown. *Sternum* reddish-yellow; *Mesosternum;* centre broadly

brown-black. *Legs: coxæ* and *fulcra* yellowish-white; *thighs* clothed with somewhat erect, brown hairs; 1st and 2nd pairs orange-red, with one or two longitudinal rows of black spots on each side, towards the apex; 3rd apical half brownish-red, with an irregular piceous patch on the upperside, composed of black spots, more or less confluent, underside generally with 2 rows of spots; *tibiæ, tarsi,* and *claws,* as in the ♂.

Length, 3—3½ lines.

Not an uncommon species at Lewisham, Eltham, Bexley, &c., by beating bushes in May.

Family 16.—EROTICORIDÆ.

Genus 1.—Eroticoris.*

In developed examples elongate, slightly oval; in undeveloped examples broadly oval posteriorly. *Elytra* in the latter case without *cuneus* or *membrane.*

Head short, pointed, vertical in front, twice as broad across the eyes as long; *Crown* convex, gently deflected to the base of the clypeus, with a deep central channel; hinder margin between the eyes with a very narrow transverse keel; *Clypeus* very convex, apex considerably in front of the eyes, and with the short antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe longish convex, pointed, produced in front; side lobes short, narrow; rounded outwardly at the apex. *Antennæ;* in developed examples shorter than the body, in undeveloped examples ♂ longer than the ♀, about ⅗ths as long as the body; 1st joint stout, somewhat cylindrical, curved along the inside, almost as long as the head; 2nd, 3rd, and 4th somewhat filiform; 2nd, 2½ times as long as the 1st; 3rd and 4th as long as or a little longer than the 2nd, 3rd longer than the 4th, the latter compressed on the sides. *Eyes* large, prominent; viewed from above, hemispherical, from the side short oval. *Rostrum* reaching to the 1st abdominal segment.

Thorax.—Pronotum longish trapeziform; in developed examples 1¾ time as broad on the posterior margin as long, in undeveloped ones about 1¼ time, with a broad collar and 2 callosities in front, most perceptible in undeveloped examples, frequently formed into

* ἐρωτις, a loved one, κορίς, a bug.

one, and occupying the entire width of the pronotum; anterior margin straight, constricted; sides straight to beyond the callosities, then suddenly widening out to the hinder angles; hinder angles somewhat acute, reflexed in developed specimens, in undeveloped ones somewhat overhanging the base of the elytra; posterior margin concave. *Scutellum* triangular, equilateral, with a transverse channel a little before the middle of the basal portion; in developed examples very convex, considerably raised above the clavus, and deflected to the transverse channel; hinder portion flattish convex, constricted at the transverse channel; sides slightly convex. *Elytra* longer than the abdomen, slightly elevated posteriorly, cuneus and membrane slightly deflected; *Clavus* convex, deflected to the corium; *Corium* flattish convex; anterior margin somewhat constricted before the middle; *Cuneus* triangular, anterior margin equal in length to the base. *Sternum: Prosternum;* xyphus triangular, sides slightly convex; *Mesosternum* short, convex, elevated posteriorly, with a faint central channel; posterior margin convex, indented in the middle. *Legs: thighs;* 3rd pair slightly thickened before the apex; *tarsi;* 3rd joint of the 3rd pair longest; 1st and 2nd of almost equal length.

Abdomen of the ♂ with the organ of generation exposed on the left side.

Species 1.—EROTICORIS RUFESCENS.

HALTICUS RUFESCENS, *Burm.* Handb. ii, 278, 4 (1835).
CAPSUS CORIZOIDES, *H. Schf.* Wanz. iv, 35, fig. 387 (1838); with developed elytra.
— BRACHYPTERUS, *Boh.* Gott. Ins. Fauna, 254 (1849); *Kirschb.* Caps. 71, 78, & 115 (1855).
— (CAPSUS) RUFESCENS, *Flor,* Rhyn. Liv. i, 543, 41 (1860).
ALLODAPUS* CORYZOIDES, *Fieb.* Europ. Hem. 262 (1861)
— RUFESCENS, *Scott.* Ent. Ann. 161, 1, tab. 1 fig. 4 ♂ (1864).

Brown-red, sparingly clothed throughout with fine, long, erect, golden-yellow hairs. Both sexes generally with undeveloped elytra.

Head pitchy brown; *Crown* frequently, along the inner margin of the eyes, and the antenniferous processes, reddish. *Antennæ;*

* *Allodape*, a genus of Hymenoptera, *Lepell.* et *Serv.* 1825.

1st joint red, base pitchy black, generally with the apex pale yellow, or in the middle a pale yellow ring; 2nd red, apical third pitchy black; 3rd red, basal half pitchy black; 4th red, base darker, apex pale yellow. *Eyes* dark brown. *Rostrum* brown, tip blackish.

Thorax.—Pronotum shagreened, and finely wrinkled transversely; in undeveloped examples piceous across the callosities. *Scutellum;* basal angles frequently piceous; basal portion smooth; hinder portion finely wrinkled transversely. *Elytra; Clavus* brown; claval suture very narrowly pale; *Corium;* anterior margin pale yellowish-white; at the base a large whitish triangular patch, and at the apex an almost square white patch, extending across the disk to the 1st nerve; the remaining portion of the disk ferruginous brown, somewhat paler below the apex of the clavus, and with a narrow dark-brown streak next the anterior margin, which is hereon frequently brown; *Cuneus* black-brown; base very narrowly red; *Membrane* blackish; below the apex of the cuneus a white, somewhat triangular, patch; cell-nerves yellowish-white; outer cell interiorly narrowly margined with black; apex black. *Legs; coxæ*, and *fulcra* yellowish-white; *thighs* red, with a few erect, golden-yellow hairs towards the apex; 2nd and 3rd pairs before the apex somewhat broadly brown; *tibiæ* red, with fine, somewhat spinose, yellowish hairs; apex piceous; knees of the 3rd pair yellowish; *tarsi* brown; 3rd joint darkest.

Length, 2 lines.

In undeveloped examples the anterior margin of the elytra is rounded at the apex, and the markings are similar to those in the developed form; the posterior margin almost straight, and with a narrow black-brown streak extending nearly from the apex to the 1st nerve. The 3rd pair of *tibiæ* are frequently blackish or brown at the base.

Length, 1½ line.

The description of the developed form of this insect has been drawn up from a single ♀ taken in July of last year, on Plumstead Common, by Dr. Power, who also found several undeveloped specimens. We had also previously met with the undeveloped form at the roots of very short heath at the same place; Knighton Heath, in July, and Thornmoor, York, in August, (*Dale*). It appears to be very local.

Family 17.—LOPIDÆ.

Genus 1.—Lopus, *Hahn.*

Elongate, almost parallel.

Head short, vertical in front, 2½ times as broad across the eyes as long; *Crown* flat, horizontal, almost level with the upper margin of the eyes; *Clypeus* convex; base almost in a line with the anterior margin of the eyes; apex, and short antenniferous processes in a line with the middle of the lower half of the eyes; side lobes stout, convex, rounded outwardly; *Face;* central lobe long, convex, stout; side lobes long, narrow, rounded outwardly. *Antennæ* as long as the body, 1st joint cylindrical, longer than the head; 2nd slightly thickened to the apex, a little more than twice as long as the 1st; 3rd and 4th filiform, together as long as the 2nd, 3rd a little shorter than the 4th. *Eyes* large, prominent; viewed from above hemispherical, from the side, oval. *Rostrum* reaching to the end of the metasternum.

Thorax.—Pronotum trapeziform; nearly twice as broad on the posterior margin as long, with a collar and 2 callosities in front; anterior margin straight, or slightly indented in the middle; sides very slightly concave, margined to behind the callosities; hinder angles rounded; posterior margin convex, almost straight across the scutellum; disk convex, deflected to the callosities. *Scutellum* triangular, equilateral; considerably raised above the clavus, with a transverse channel near the base; the anterior portion almost or entirely concealed beneath the posterior margin of the pronotum. *Elytra* longer than the abdomen, ♂ longest; horizontal as far as the junction with the clavus and membrane, which are deflected; *Clavus* convex, deflected to the corium; *Corium* flattish convex, flat between the claval suture and the 1st nerve; *Cuneus* long, triangular. *Sternum: Prosternum;* xyphus, triangular, short; sides straight. *Mesosternum* short, convex, with a central channel; posterior margin convex; indented in the middle. *Metasternum;* flattish convex; central angle prominent. *Legs: tarsi;* 3rd joint of the 3rd pair longest; 1st and 2nd subequal.

Species 1.—Lopus gothicus.

Cimex gothicus, *Lin.* F. S. 966 (1761); *Scop.* Ent. Carn. 131, 381 (1763); *Lin.* S. N. 726, 72 (1767); *Schrank*, Enum. 283, 545 (1781); *Fab.* Mantiss. ii, 305, 271 (1787).
Lygæus — *Wolff*, Ic. Cim. 33, tab. 4, fig. 33 (1800).
Capsus — *Fab.* S. R. 244, 20 (1803); *Panz.* F. G. 92, 15 (1805); *Fall.* Hem. Suec. i, 117, 4 (1829).
Lopus — *Hahn*, Wanz. i, 12, fig. 5 (1831); *Meyer*, Caps. 41, 5 (1843); *Kolen.* Mel. Ent. ii, 100, 73 (1845); *Kirschb.* Caps. 37, 14 (1855); *Fieb.* Europ. Hem. 266, 3 (1861).
Phytocoris gothicus *Burm.* Handb. ii, 271, 22 (1835).
Capsus (Capsus) gothicus, *Flor*, Rhyn. Liv. i, 479, 7 (1860).

Black, clothed with long, erect, black hairs. *Thighs* entirely black.

Head.—Crown with a yellowish-white, or orange-red spot between and close to the eyes. *Clypeus;* side lobes generally brownish-red. *Antennæ;* 1st and 2nd joints with long erect black hairs.

Thorax.—Pronotum; sides narrowly red, sometimes reaching as far as the hinder angles. *Scutellum;* hinder portion red; base, and frequently a streak across the disk, next the transverse channel, and angles, black. *Corium* shagreened; anterior margin whitish, yellowish or orange-red, the apex frequently narrowly dusky or black; *Cuneus* yellowish-white, orange-yellow, or orange-red; apex, inner margin, and inner basal angle, black; *Membrane* black, between the apex of the cuneus and the inner cell-nerve narrowly pale; inner marginal and cell-nerves piceous. *Sternum: Prosternum;* yellowish or orange-yellow, narrowly margined with black; xyphus yellowish, or yellowish-white, sides narrowly black; *Meso-* and *Metasternum* black. *Legs;* 1st pair of coxæ pale at the apex; *fulcra* and *thighs* black, the latter clothed with long, erect, black hairs; *tibiæ* black, or pitchy black; in the latter case the apex darker, clothed with long, fine, erect black hairs; *tarsi* and *claws* black.

Abdomen of the ♂ black, sides of the segments with a reddish spot; ♀ sides of the segments more or less broadly reddish or orange-yellow.

Length, 2½—3 lines.

This insect has occurred at Coombe, and also in the New Forest, in June (*Dr. Power*).

Species 2.—Lopus miles.

Black, sparingly clothed with fine, short, depressed, yellowish hairs. *Thighs* with a broad yellow ring in the middle; *tibiæ* with a broad pale ring beyond the middle.

Head.—Crown with a broad orange-yellow streak along the inner margin of the eyes; hinder margin frequently orange-yellow; *Clypeus;* side lobes yellow, or orange-yellow. *Antennæ* black. *Rostrum* pitchy black; apex of the 2nd and 3rd joints narrowly, and base of the 4th broadly, brown.

Thorax.—Pronotum; sides red, broadest at the hinder angles; generally with a central line, a transverse streak across the anterior margins of the callosities, and the centre of the collar, yellow. *Scutellum* red, basal angles black. *Elytra;* ♀, *Corium;* anterior margin whitish, or yellowish-white; ♂ black, base somewhat pale; *Cuneus* red, apex and basal inner angle black; *Membrane* blackish, slightly iridescent; below the apex of the cuneus, and along the anterior margin a short narrow yellowish streak; inner marginal and cell-nerves pitchy brown, the outer cell narrowly margined with black. *Sternum: Prosternum;* sides red or orange-red; xyphus pale yellow; *Mesosternum* black, sides exteriorly narrowly reddish; *Metasternum* black, sides exteriorly narrowly reddish. *Legs; coxæ* black, apex yellow; *fulcra* yellow; *thighs* black, with a broad yellow ring in the middle; *tibiæ* black, with a broad brownish-yellow ring beyond the middle, and with short, somewhat spinose, black hairs; *tarsi* and *claws* black.

Abdomen underneath black; *Connexivum* and sides of the segments reddish.

Length, 3—3½ lines.

This insect closely resembles *L. gothicus*, from which it may be distinguished by the pale ring on the thighs, and also from the anterior margin of the corium of the ♂ being black, the basal half dusky white.

Several specimens beaten from toadflax (*Linaria vulgaris*) in hedges, in July, near Halfway Street.

Family 18.—DICHROOSCYTIDÆ.

Genus 1.—Dichrooscytus, *Fieb.*

Elongate, almost parallel.

Head large, long, pointed, twice as broad across the eyes as long; viewed from the side the crown, clypeus, and face, form a continuous curve; *Crown* almost flat, slightly deflected to the clypeus; *Clypeus* convex, the apex considerably in front of, and with the short antenniferous processes almost in a line with the lower margin of the eyes; *Face;* central lobe long, convex, somewhat broad, pointed; side lobes shortish, narrow, somewhat parallel. *Antennæ* shorter than the body; 1st joint slightly thickened, somewhat cylindrical, shorter than the head; 2nd thinner than the 1st, more than 3 times its length, scarcely thickened to the apex; 3rd and 4th filiform, together a little shorter than the 2nd, 4th about $\frac{3}{4}$ths the length of the 3rd. *Eyes* large, prominent; viewed from above short oval; from the side long, narrow, oval. *Rostrum* free, reaching to the 2nd or 3rd abdominal segment; 1st joint stout, reaching to the apex of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, twice as broad on the posterior margin as long, with a narrow collar, and 2 callosities in front; sides straight, rounded to the collar; hinder angles acute, very slightly raised; posterior margin straight across the scutellum, from thence rounded to the hinder angles; disk convex, flattish in the centre, deflected to the head. *Scutellum* triangular, equilateral, considerably raised above the clavus, with a transverse channel in front, the basal portion almost entirely concealed beneath the posterior margin of the pronotum. *Elytra* horizontal, longer than the abdomen. *Clavus* convex, deflected to the corium; *Corium* convex, cuneus and membrane deflected. *Sternum: Prosternum;* xyphus triangular, equilateral, sides keeled; *Mesosternum* short, convex, elevated posteriorly, with a central channel; posterior margin convex, indented in the middle; *Metasternum;* centre angle prominent. *Legs; tarsi* long; 3rd joint almost equal in length to the 1st and 2nd; 1st and 2nd subequal.

Species 1.—Dichrooscytus rufipennis.

Phytocoris rufipennis, *Fall.* Hem. Suec. i, 92, 31 (1829); *Zett.* Ins. Lap. 274, 16 (1839).
Capsus — *H. Schf.* Wanz. vi, 50, fig. 610 (1842); *Sahlb.* Geoc. Fen. 105, 31 (1848); *Kirschb.* Caps. 55, 48 (1855).
— (Capsus) rufipennis, *Flor*, Rhyn. Liv. i, 489, 12 (1860).
Dichrooscytus — *Fieb.* Europ. Hem. 269, 1 (1861).

Red, or reddish-yellow, clothed with fine, short, depressed, pale yellow hairs, intermixed with black ones.

Head yellowish-green. *Antennæ* yellowish-green. *Eyes* brown. *Rostrum* greenish, tip brown or black.

Thorax.—Pronotum yellowish-green. *Scutellum* reddish or orange-red; apex, and frequently a central line, yellowish. *Elytra: Corium;* anterior margin broadly greenish, or greenish-yellow, the colour generally spreading for a little way upon the disk as it approaches the middle; *Cuneus;* anterior margin narrowly greenish, or greenish-yellow; *Membrane* pale, cell-nerves red. *Sternum* pale greenish-yellow. *Legs* yellowish-green or greenish-yellow; *tibiæ* with short, pale brown, somewhat spinose hairs; apex brownish; *tarsi;* apex of the 3rd joint, and *claws*, brownish.

Length, 2¾ lines.

Several specimens have been beaten from *Pinus sylvestris* at Dartford Heath and Shirley, in July and August; Mickleham, and Esher (*Dr. Power*).

Family 19.—HALTICOCORIDÆ.

Genus 1.—Halticocoris.*

Very short, oval. *Elytra* frequently without cuneus and membrane, sometimes without clavus.

Head long, pointed, vertical in front, viewed from above twice as broad across the eyes as long; *Crown* convex, forming a continuous curve to the apex of the face; hinder margin between the eyes with or without a narrow keel; *Clypeus* long, convex; apex in a line with

* ἁλτικός, good at leaping, κορις, a bug.

or a little lower than the under margin of the eyes; antenniferous processes in a line with the middle of the lower half of the eyes; *Face;* central lobe long, broad, convex; side lobes short, narrow, parallel, rounded outwardly. *Antennæ* thin, considerably longer than the body; 1st joint cylindrical, shorter than the head; 2nd scarcely thickened to the apex, 4 times longer than the 1st; 3rd and 4th filiform, together much longer than the 2nd, 3rd shorter than the 4th, 4th about as long as the 2nd. *Eyes* small, more or less prominent, viewed from the side short, somewhat oval, scarcely ⅓ as long as the side of the head. *Rostrum* reaching to the end of the metasternum; 1st joint stout, reaching to the apex of the xyphus of the prosternum.

Thorax.—Pronotum trapeziform, in developed examples about 1¾ time as broad on the posterior margin as long; in undeveloped examples almost as long as broad, with 2 flattish callosities in front; anterior margin in developed examples straight, angles rounded, sides straight; hinder angles short, acute, slightly raised; posterior margin convex; disk convex, slightly deflected to the head. *Elytra* in undeveloped examples with or without a clavus; pronotum broad; callosities almost obsolete; anterior margin straight, angles rounded; hinder angles very short, acute; posterior margin straight, rounded towards the hinder angles; disk horizontal, flattish convex. *Scutellum* triangular, level with the clavus, convex or flattish convex, with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum. *Elytra* in developed examples convex, longer than the abdomen, horizontal as far as the junction with the cuneus and membrane, which are much deflected; in undeveloped examples very convex, rounded at the apex and not covering the abdomen; *Clavus* in developed examples convex, deflected to the corium; *Corium* convex; anterior margin somewhat reflexed at the base; *Cuneus* triangular; anterior margin rounded at the base, leaving a small but distinct notch. *Sternum: Prosternum;* xyphus triangular, sides somewhat reflexed. *Legs* saltatorial; 3rd pair of *thighs* long, stout, flattened on the sides; *tarsi;* 2nd joint of the 3rd pair longest.

Species 1.—HALTICOCORIS PALLICORNIS.

SALDA PALLICORNIS, *Fab.* S. R. 115, 6 (1803).
ACANTHIA PALLICORNIS. *Wolff,* Ic. Cim. 128, 122, tab. 13, fig. 122, *a, b* (1804).
LYGÆUS — *Fall.* Mon. Cim. 95, 80 (1807).

PHYTOCORIS PALLICORNIS *Fall.* Hem. Suec. i, 113, 70 (1829).
HALTICUS* — *Hahn*, Wanz. i, 114, fig. 61 (1831); *Burm.* Handb. ii. 278, 2 (1835); *Fieb.* Europ. Hem. 281, 3 (1861).
CAPSUS — *Meyer*, Caps. 110, 103 (1843); *Sahlb.* Geoc. Fen. 118, 62 (1848); *Kirschb.* Caps. 102 & 151 (1855).
ASTEMMA APTERUM, *Am. et Serv.* Hém. 284, 1 (1843).
EYRECEPHALA PALLICORNIS, *Kolen.* Mel. Ent. ii, 130, 118 (1845).
CAPSUS (CAPSUS) PALLIDICORNIS, *Flor*, Rhyn. Liv. i, 583, 67 (1860).

Black, shining, clothed with fine, short, depressed hairs; ♀ undeveloped. *Elytra* shorter than the abdomen; *Clavus* sometimes not distinct; *Cuneus* and *Membrane* wanting.

Head.—*Antennæ* yellow; 2nd joint at the apex sometimes narrowly brown; 3rd at the apex broadly, and 4th frequently brownish-yellow.

Thorax.—*Pronotum* broad, punctured, somewhat transversely wrinkled posteriorly; callosities almost obsolete. *Scutellum* finely wrinkled transversely. *Elytra* somewhat deeply and coarsely punctured; in undeveloped examples shorter than the abdomen; *Clavus* sometimes not distinct; *Cuneus* and *Membrane* wanting. *Sternum* black. *Legs; thighs* black, apex broadly yellowish; *tibiæ* yellow, with short, somewhat spinose, yellow hairs; *tarsi* yellow; 3rd joint and *claws* black.

Abdomen black underneath, clothed with fine, short, grayish hairs.

Length, 1¼—1½ line.

We have not met with the developed form of the insect, which, according to Fieber, has the membrane smoke-brown, with clear cell-nerves margined with brown.

Not a common species. It has occurred at Headley Lane, by sweeping, and at Darenth, amongst *Centaurea*, in August.

Species 2.—HALTICOCORIS LUTEICOLLIS.

LYGÆUS LUTEICOLLIS, *Panz*, F. G. 93, 18 (1805).
CAPSUS PROPINQUUS, *H. Schf.* Wanz. vi, p, 47, fig. 606 (1841); *Kirschb.* Caps. 120, 147 (1855).
HALTICUS LUTEICOLLIS, *Fieb.* Burop. Hem. 281, 1 (1861).

Black, shining, clothed with fine, short, depressed, yellow hairs. *Elytra* developed.

* Haltica, *Hahn*, a name used in Coleoptera, *Illiger*, 1801.

Head ochreous yellow; *Crown;* hinder margin narrowly black; *Face;* central lobe broadly black; side lobes black. *Antennæ* ochreous-yellow; 2nd joint at the apex narrowly blackish; 3rd and 4th brownish, 3rd at the base broadly ochreous-yellow. *Eyes* brown or black. *Rostrum* yellow, tip black.

Thorax.—Pronotum ochreous-yellow, finely wrinkled transversely; posterior margin broadly black; disk with a faint central channel. *Elytra; Clavus* and *Corium* finely punctured; *Membrane* brown-black; cell-nerves brown. *Sternum; Prosternum* ochreous-yellow; *Meso-* and *Metasternum* black. *Legs* yellowish; *thighs;* 2nd and 3rd pairs frequently black, apex whitish-yellow; *tibiæ;* 3rd pair generally black at the base; *tarsi* yellowish; 3rd joint and *claws* black.

Abdomen black underneath, clothed with very short, fine, yellowish hairs.

Length, 1½ line.

An abundant species, by searching amongst *Galium*, near Strood, in July; also at Llantrissant, South Wales, by sweeping clover.

Family 20.—STIPHROSOMIDÆ.

Genus 1.—Stiphrosoma, *Fieb.*

Short, broad, ovate.

Head triangular, vertical in front, viewed from above very short, 4 or 5 times as broad across the eyes as long; *Crown* almost flat, very much deflected; hinder margin between the eyes with a strong keel; *Clypeus* convex, base a little lower than the anterior margin of the eyes; apex a little in front of and with the long antenniferous processes in a line with the lower margin of the eyes; *Face;* central lobe short, broad, flattish, somewhat pointed; side lobes short, narrow. *Antennæ* very short, scarcely half the length of the body; 1st joint shorter than the head, somewhat cylindrical; 2nd 3 times as long as the 1st, slightly thickened to the apex; 3rd and 4th filiform, together as long as the 2nd, 4th about ¾ths the length of the 3rd. *Eyes* small, prominent, viewed from above oval, from the side short oval. *Rostrum* reaching to the metasternum; 1st joint stout, reaching to the end of the xyphus of the prosternum.

Thorax.—Pronotum short, trapeziform, almost twice as broad on the posterior margin as long, with 2 flat callosities in front; anterior

margin straight, angles rounded; sides convex; hinder angles short, somewhat acute, slightly raised; posterior margin convex, straight across the scutellum; disk convex, deflected to the head. *Scutellum* triangular, level with the clavus, with a transverse channel near the base, the basal portion concealed beneath the posterior margin of the pronotum. *Elytra* horizontal, in the ♂ a little longer than the abdomen, in the ♀ as long as the abdomen; *Clavus* convex, deflected to the corium; *Corium* convex; anterior margin reflexed for about ⅓rd its length from the base; *Cuneus* short, triangular; anterior margin rounded at the base, leaving a small but distinct notch. *Sternum: Prosternum;* xyphus short, triangular, sides keeled; *Mesosternum* short, convex on the sides, flattish above, elevated posteriorly; posterior margin almost straight in the middle; *Metasternum* in the middle very short, somewhat convex. *Legs* somewhat stout; *tibiæ;* 3rd pair slightly bent; *tarsi;* 3rd joint of the 3rd pair longest; 1st and 2nd of almost equal length.

Species 1.—Stiphrosoma leucocephala.

Cimex leucocephalus, *Lin.* F. S. 940 (1761); S. N. 723, 60 (1767); *De Geer*, Mém. iii, 290, 28 (1780); *Fab.* Mantiss. ii, 304, 255 (1787).

Lygæus — *Wolff*, Ic. Cim. 76, tab. 8, fig. 73 (1801); *Fab.* S. R. 237, 173 (1808); *Panz.* Ins. Ger. 92, 12 (1805).

Phytocoris — *Zett.* Ins. Lap. 276, 32 (1839); *Fall.* Hem. Suec. i, 111, 67 (1829); *Hahn.* Wanz. ii, 88, fig. 174 (1834).

Attus — *Burm.* Handb. ii, 276, 1 (1835).

Capsus — *Meyer*, Caps. 109, 100 (1843); *Sahlb.* Geoc. Fen. 117, 59 (1848); *Kirschb.* Caps. 86, 114 (1855).

— (Capsus) leucocephalus, *Flor*, Rhyn. Liv. i, 558, 51 (1860).

Stiphrosoma leucocephala, *Fieb.* Europ. Hem. 280, 1 (1861).

Black, clothed with very fine, short, depressed, whitish hairs.

Head ferruginous. *Antennæ;* 1st joint ferruginous; 2nd, 3rd, and 4th, black; apex of the last brown.

Thorax.—Pronotum deeply and coarsely punctured. *Scutellum* wrinkled transversely, with a short longitudinal keel at the apex. *Elytra* finely and thickly punctured, almost shagreened; *Membrane*

brown-black; below the cells, and extending to the apex, a darker, somewhat oval patch; inner marginal and cell-nerves pitchy black; cells black-brown, the outer one margined exteriorly with black-brown. *Sternum* black. *Legs* ferruginous; *tibiæ* with short, black somewhat spinose hairs; *tarsi* and *claws* black.

Abdomen black underneath, clothed with very short, fine, whitish hairs.

Length, $1\frac{1}{2}$—$1\frac{3}{4}$ line.

An abundant species at Scarborough, amongst the short grass on the tops of the cliffs; also on the flowers of *Vicia cracca* in July (*Wilkinson*); Mickleham (*Dr. Power*).

Note.—For the most part the insects composing this section, especially those that are green, fade much in colour after death. All have been described from specimens with their wings expanded, as without this being done their true characters cannot be ascertained, because the different colour of the upperside of the abdomen shining through changes their natural appearance. In describing the breadth of the head in proportion to its length, it has always been done from a vertical point of view, and with reference to the natural position of the head.

Section 10.—*ANTHOCORINA*.*

Family 1.—MICROPHYSIDÆ.

Genus 1.—Myrmedobia, *Bärens*.

Head broad, short, convex, 5-sided; or, including the eyes, subtriangular; *Face* projecting, deflected; sides at first parallel, then divergent in a curve; central lobe broad, short, obtuse; side lobes narrow, triangular, almost as long as the central lobe; cheek plates projecting as far as the end of the central lobe. *Antennæ* slender (in the ♂ longer and stronger than in the ♀); 1st and 2nd joints slightly thickest, the 1st not ½ so long as the 2nd, in the ♂ reaching beyond the end of the face; 2nd and 3rd in length subequal, the base very slender, the 2nd slightly thickened towards the apex; 3rd and 4th filiform, 4th slightly longer than the 2nd or 3rd, apex

* Page 36.

acute. *Eyes* large, prominent; the orbit, from above, concave. *Rostrum* thick, curved, reaching to the 1st pair of coxæ.

Thorax.—Pronotum convex, much broader than long, trapeziform in the ♂, almost quadrangular in the ♀; anterior margin constricted into a narrow annulus; posterior margin concave. *Scutellum* short, broad, equilaterally triangular, the base transversely convex. *Elytra:* ♂; *Clavus* broad, widest posteriorly; *Corium;* anterior margin incrassated, raised, from the base widened in a long curve, more or less contracted at the cuneus; disk rather convex as far as the cuneus, then flatly deflected; *Embolium* long, concave, posterior margin slightly defined; *Cuneus;* at the base, not projecting so far as the anterior margin of the corium; *Membrane* broad, anterior margin slightly constricted at the junction with the cuneus; base in the middle with a semioval cell, from its lowest part 1 thick nerve dividing immediately into 3 very short, fine nerves; from the inner side of the cell 1 fine short nerve; all the nerves soon become evanescent: ♀; *Corium* very convex, broad, short, oval, inner margins straight, not overlapping. *Sternum; Mesosternum* very convex, hindwardly obtuse, projecting; *Metasternum* depressed. *Legs;* in ♂ long, thin; *thighs* cylindrical, in ♀ shorter and stouter; *tibiæ* slightly thickened to the apex; 3rd pair slightly bent; *tarsi* long, slender.

Species 1.—Myrmedobia coleoptrata.

♀ Salda coleoptrata, *Fall.* Mon. Cim. 31, 7 (1807).
♂ Lygæus exilis, *Fall.* Mon. Cim. 73, 23 (1807).
♂ Anthocoris exilis, *Fall.* Hem. Suec. 68, 5 (1829); *H. Schf.* Wanz. ix, 230 (1850).
♀ Bryocoris coleoptrata, *Fall.* Hem. Suec. 76 (1829).
♀ — palustris, *Fall.* Hem. Suec. 152, 2 (1829).
♀ Microphysa myrmecobia, *Märkel,* Germ. Zeits. 5, 262 (1839).
♂ Anthocoris subtilis, *Sahlb.* Geoc. Fen. 79, 9 (1848).
♀ Myrmedobia coleoptrata, *Bärens.* Berl. Ent. Zeits. ii, 160 (1858); *Fieb.* Europ. Hem. 133, 1 (1861).
♂ & ♀ Microphysa Curtisii, *Flor,* Rhyn. Liv. i, 660 (1860).
♂ Idiotropus exilis, *Fieb.* Europ. Hem. 133, 2 (1861).

♂ Black; dull.

Head.—Antennæ with very fine projecting whitish hairs. *Ocelli* red. *Rostrum* piceous.

Thorax.—Pronotum; in the middle a long, linear, transverse inci-

sion, the ends of it curving slightly forward; anterior ½ of the disk raised, shining; posterior ½ dull, delicately, transversely crenate. *Scutellum* with very fine whitish hairs. *Elytra; Clavus* and *Corium* with delicate, silky hairs; clavus brown-black; corium with the anterior margin black; *Embolium* pale, diaphanous; *Cuneus* black-brown, the base pale; *Membrane* dusky, iridescent, with a whitish lunule next the cuneus. *Legs* brown-black; *thighs* with silky hairs.

Abdomen beneath brown-black, with long, silky, projecting hairs.

Length, 1 line.

♀ Black and red, shining.

Head red; face more or less piceous. *Antennæ* black-brown; 2nd joint on the basal ½ yellowish.

Thorax.—Pronotum more convex and narrower behind than in the ♂; red or red-brown, with fine yellowish hairs, the transverse incision and anterior convexity but faintly indicated. *Elytra* black, broad, ovate, very convex, finely crenate-punctate, clothed with silky, prominent, yellow hairs. *Sternum* red, sides dusky. *Legs; coxæ* reddish; *thighs* piceous, apical ½ of the 1st pair, and the apex of the others, yellowish; *tibiæ* yellowish-brown; *tarsi;* 1st joint yellowish; 2nd black-brown.

Abdomen red, sides broadly black-brown, the colours merging into each other.

Length, ⅔ line.

Local: 1 ♂ Spridlington, Lincolnshire (*Wollaston*); 1 ♂ from Mr. G. R. Crotch's collection, without note of locality; ♀ taken in some number by Dr. Power, in June, under leaves on a hedge-bank, at Highgate Wood; afterwards ♂ and ♀ taken by us at the same place, several pairs being seen *in cop.*, thus confirming the observations, as to the sexes, of Herr Tieffenbach ('Berl. Ent. Zeits.' 1861). In Germany the species is found in the nests of ants; but in our experience, although there were ants on the bank, the *Myrmedobia* were not associated with them. The ♂ is extremely active, and instantly takes flight; the ♀, at first sight, is very like the coleopterous *Alexia pilifera*, which was found with it.

Genus 2.—ZYGONOTUS, *Fieb.*

♂ Long, narrow, subelliptic, sides behind the pronotum, parallel.
♀ Short, *Head* and *thorax* very narrow, *abdomen* broader than long, transversely oval.

Head long, narrow; *Crown* convex, widened behind the eyes; *Face* long, horizontal, cylindrical, narrower than the crown, the lobes well defined; central lobe broadest; side lobes as long as the middle lobe, parallel. *Antennæ* filiform; 1st joint, not thickened, reaching to the end of the face; 2nd a little thickened to the apex, in the ♂ nearly as long as the 3rd and 4th together, in the ♀ not so long; 3rd and 4th in length subequal. *Eyes* abruptly prominent in front; the orbit from above, straight. *Ocelli;* in the ♂ conspicuous, in the ♀ very small. *Rostrum* reaching to the 2nd pair of coxæ, slender; 2nd joint longer than the 3rd; 4th about ⅔rds the length of the 2nd, curved.

Thorax.—Pronotum trapeziform (in the ♀ much narrower posteriorly than in the ♂); front very narrow, constricted; anterior margin with an incrassated annulus. *Scutellum* triangular. *Elytra;* ♂,—*Clavus* broad, widest posteriorly, deflected to the corium; claval suture depressed; *Corium;* anterior margin nearly straight, incrassated, slightly constricted at the base of the cuneus; *Embolium* long, deeply sulcate; disk slightly convex as far as the cuneus; *Cuneus* long, triangular; *Membrane* broad, rounded; basal cell large, with 3 short divergent nerves, and one straight, short nerve near the inner basal angle of the membrane. *Elytra;* ♀,—without clavus and membrane, either not covering the abdomen, or merely rudimentary. *Wings* wanting. *Sternum; Mesosternum* posteriorly convex, in front compressed; *Metasternum* compressed and depressed. *Legs* long; *tibiæ* slender, slightly widened to the apex; 3rd pair slightly curved; *tarsi* long, slender; 1st joint very short.

Abdomen; ♂ long, pointed; ♀ short, transversely oval, convex *Connexivum* very narrow.

Species 1.—ZYGONOTUS PSELAPHIFORMIS.

♀ LORICULA PSELAPHIFORMIS, *Curt.* Ent. Mag. i, 198, 1 (1833).
♀ MICROPHYSA — *Westw.* An. Soc. Ent. Fr. iii, 642, t. 6, fig. 3, (1834); *Bohem.* Vet. Akad. Förh. 60, 16 (1853).
♀ — PSELAPHOIDES, *Burm.* Handb. ii, 287 (1835); *H. Schf.* Wanz. ix, 186, t. 315, fig. 970 (1850); ♂ & ♀, *Flor*, Rhyn. Liv. i, 661, 2 (1860).
♂ ANTHOCORIS STIGMA, *Fieb.* Weit. Beitr. i, 107, 8, t. 2, fig. 5 (1836).
— EXILIS, *Sahlb.* Geoc. Fen. 78, 8 (1848).
— TRUNCATULUS, *H. Schf.* Wanz. ix, 219 & 228, t. 316, fig. 974 (1850).
♂ ZYGONOTUS STIGMA, *Fieb.* Wien. Ent. Mon. iv, t. 6, fig. D (1860); ♂ & ♀ Europ. Hem. 134, 2 (1861).

♂ Black. *Antennæ* with very short black hairs. *Eyes* oval, large, prominent in front, convergent behind. *Ocelli* prominent, distant, red. *Rostrum* black-brown.

Thorax.—Pronotum delicately transversely crenate, with fine, short hairs; sides widely divergent, straight; hinder angles obtuse; posterior margin deeply concave; disk, in the centre, with a deep transverse furrow, the portion before it convexly raised, the posterior portion less convex. *Scutellum* smooth, base convexly raised, middle depressed, apex convex. *Elytra; Clavus* black-brown, next the claval suture light brown; *Corium* black-brown, next the claval suture light brown; *Embolium;* the outer and inner nerves black, the ends outwardly incrassated, reddish; *Cuneus* red-brown, base yellowish, apex obtuse; *Membrane* fuscous-gray, semi-diaphanous, iridescent; cell and inner margin fuscous, opaque; beneath the cuneus narrowly whitish. *Wings* fuscous, iridescent. *Sternum* glossy. *Legs; thighs* black-brown, apex yellow-brown; *tibiæ* yellow-brown, apex blackish; *tarsi* brown.

Abdomen glossy; apex with long hairs.

Length, 1¼ line.

♀ Black. *Head* as far forward as the base of the eyes, red, the rest black-brown. *Antennæ* black-brown; 2nd joint, except the base and apex, yellowish. *Eyes* small, black-brown. *Ocelli* very small,

scarcely perceptible, black-brown. *Rostrum* black-brown; the end of the 2nd and 3rd joints, and the whole of the 4th, yellowish.

Thorax.—Pronotum narrow, trapeziform, with very short, yellowish hairs; anterior angles rounded and deflected; sides a little projecting in the middle; hinder angles acute, posteriorly produced; posterior margin concave; disk in the middle transversely convex, the hinder 4th nearly flat, delicately transversely crenate. *Scutellum* small, slightly convex, base not raised, apex acute. *Elytra* $\frac{2}{3}$rds the length of the abdomen, dull yellow-brown, with very short hairs, very convex; anterior margin yellow, thin, reflexed, greatly rounded; hinder angles broadly rounded; posterior margin very slightly rounded; inner margin shorter than the anterior. *Legs* as in the ♂, except that the *tibiæ* are not blackish at the apex.

Abdomen glossy, slightly convex, with very short, yellowish hairs; *Connexivum* slightly dentate on the margin.

Length, $\frac{3}{4}$ line.

Near Halifax, Yorkshire (*Curtis*); under bark, Windsor Park (*Westwood*); under bark, and on palings, at Lee and Croydon; box trees, Box Hill, Surrey; and in old hedges near Darenth; not scarce in June, but the ♀ always more abundant than the ♂.

Species 2.—ZYGONOTUS ELEGANTULUS.

♂ ANTHOCORIS ELEGANTULUS, *Bärens.* Berl. Ent. Zeits. ii, 191, t. 2, fig. 3, (1858).
♂ ZYGONOTUS — *Fieb.* Europ. Hem. 135, 3 (1861).

♂ like *Z. Pselaphiformis*, but narrower, lighter in colour; ♀ with the *head* and *thorax* narrow, red; the *elytra* quite rudimentary, the *abdomen* very broad and black.

♂ Black, shining.

Head.—Crown deep red; *Face* yellowish. *Antennæ* black; with fine, short hairs; 4th joint brown. *Eyes* brown. *Ocelli* approximate, prominent, red. *Rostrum* piceous, end yellowish.

Thorax.—Pronotum in front narrow; sides at first but slightly, at the middle widely divergent, very slightly concave; hinder angles narrow, acute; posterior margin very concave; disk, in the

middle, a deep, narrow furrow; before it a narrow, convex ridge; behind it the disk more broadly convex, and, at the sides, somewhat depressed. *Scutellum* smooth; in the middle a deep, transverse, shelving furrow; base convexly raised; the posterior part slightly convex. *Elytra; Clavus* inwardly brownish, outwardly whitish; *Corium* nearly flat, whitish, inwardly and posteriorly broadly brown-black; anterior margin and nerve black; *Cuneus* deep red; *Membrane* unicolorous fuscous-brown, iridescent, next the cuneus narrowly whitish; the cell blackish. *Sternum* black-brown. *Legs; thighs* piceous, ends yellowish; *tibiæ* deep yellowish, apex black-brown; *tarsi* brown.

Abdomen black-brown, base paler.

Length, 1 line.

♀ Red and black, shining.

Head entirely bright red. *Antennæ* with very fine, short hairs; 1st joint dark brown, apex usually yellowish; 2nd yellow, apical ⅓rd or ¼ black; 3rd and 4th black. *Eyes* red-brown or black. *Ocelli* very small, distant, red. *Rostrum;* 1st and 2nd joints piceous; 3rd and 4th yellowish.

Thorax.—Pronotum in front narrow, the annulus very slight; sides on the 1st 3rd very slightly divergent, on the last ⅓rds straight, parallel; hinder angles acute; posterior margin concave; disk, in the middle transversely, broadly convex, with 3 very small, scarcely perceptible, prominences; posteriorly, narrowly flat, bandlike. *Scutellum* short, convex. *Elytra* very small, not reaching beyond the thoracic segments, appearing on each side of the scutellum as a whitish, triangular piece; posterior margin straight, with a black spot at the outer angle. *Sternum* dusky brown. *Legs* deep brownish-yellow; *thighs*, at the base, and sometimes the *tibiæ*, at the apex, dusky.

Abdomen very broad, transversely oval, very convex, black, glossy; the end of the genital segment projecting as a small point.

Length, ¾ line.

Many years since, Mr. Dale identified this as the ♀ of *Z. elegantulus*, for which he had no name. In 1862, we had the pleasure of finding several pairs *in cop.* The ♀ has never been described, having doubtless been deemed to be only on the pupa state.

Abundant, in some years, at the end of June, on the trunks of

trees, and on old palings, in the London district. The males, on account of their small size, and concealment in crevices, are difficult to see.

Family 2.—ANTHOCORIDÆ.

Genus 1.—Tetraphleps, *Fieb.*

Head long, narrow, convex, produced a little behind the eyes; *Face* cylindrical, central lobe long, projecting between the antennæ; side lobes very short; antenniferous processes very short. *Antennæ* slender, 1st joint reaching to the end of the face; 2nd and 3rd slightly thickened to the apex; 2nd stouter than the 3rd, and 2⅓rd times longer than 1st; 3rd nearly ⅔rds the length of the 2nd; 4th rather shorter than the 3rd, long-fusiform. *Eyes* very large, semi-oval, projecting. *Ocelli* distant, inserted close to the eyes, prominent. *Rostrum* reaching nearly to the middle of the mesosternum.

Thorax.—Pronotum trapeziform; anterior margin straight; anterior angles rounded; sides very slightly curved, almost sinuate; side margins narrow, reflexed on the 1st ½; hinder angles obtuse; posterior margin concave; disk on the 1st ½ more convex than behind, with a slight transverse depression behind the anterior margin, and another in the middle broader and deeper, but not reaching the sides. *Scutellum* large, triangular, basal ½ convex, posterior ½ level with the clavus, or in the middle depressed; apex acute. *Elytra; Clavus* broad, deflected outwards; claval suture depressed; *Corium* slightly convex; anterior margin, as far as the cuneus, straight, reflexed, more widely at the base; *Embolium* wide, at the end raised into a perceptible narrow ridge; *Cuneus* concave, very long, triangular; anterior margin slightly curved; *Membrane* with 4 nerves, the 2 inner ones contiguous at their base. *Sternum; Mesosternum* long, convex, in front compressed into a short point, behind, with the xyphus broad, obtuse; down the middle a long, slight, depressed line; *Metasternum* in the middle short, prominent, convex. *Legs: tarsi;* 3rd pair longest, 3rd joint on all longest.

Species 1.—TETRAPHLEPS VITTATUS.

ANTHOCORIS VITTATUS, *Fieb.* Weit. Beitr. 108, 10, t. 2, fig. 6 (1836).
— BICUSPIS, *H. Schf.* Wanz. ix, 235 (1850).
— LATULA, *Flor*, Rhyn. Liv. i, 653, 6 (1860).
♀ — GERMARI, *Flor*, Rhyn. Liv. i, 649 (1860).
TETRAPHLEPS VITTATUS, *Fieb.* Europ. Hem. 136 (1861).

Black, dull. *Elytra* black-brown, often yellow-brown on the *clavus* and anterior margin of the *corium* and *cuneus;* nerves of the *membrane* conspicuous. ♂ elliptic; ♀ oval.

Head smooth. *Antennæ* black; 2nd joint sometimes more or less yellowish in the middle. *Eyes* black. *Ocelli* red or black. *Rostrum* black.

Thorax.—Pronotum delicately crenate-punctate, with very fine, short, appressed, yellowish hairs. *Scutellum* delicately punctate, posteriorly delicately crenate. *Elytra* black-brown or piceous; middle of the *Clavus* always, the apex generally, lighter; in the ♂ the anterior margin, including the *Cuneus*, has a broad yellow stripe on its entire length, being on the embolium about ½ its width, and on the cuneus widened considerably to its posterior margin, but sometimes only the reflexed portion of the anterior margin is yellowish; *Membrane* fuscous or black, with a large whitish spot at the basal exterior and interior angles; nerves white, or black and white, or black with light margins. *Sternum* shining, black or piceous; margin of the segments more or less yellowish. *Legs; coxæ* and *fulcra* yellowish; *thighs* with very fine, short hairs; black, apex yellowish; *tibiæ* orange or red-brown, apex dusky; *tarsi* brown or black.

Abdomen shining, black or red-brown, delicately crenate.

Length, 1¼ line.

Common on larches from July to September.

Genus 2.—TEMNOSTETHUS, *Fieb.*

Head long, convex; *Face* long, much narrower than the crown, a little widened before the eyes; central lobe very prominent; side lobes narrow; cheek-plates prominent; antenniferous processes short. *Antennæ* slender, 1st joint cylindrical, reaching almost to

the end of the face; 2nd 2½ times longer than the 1st, slightly thickened to the apex; 3rd and 4th long-fusiform, very slender at the base; 3rd about ½ the length of the 2nd; 4th rather shorter and thicker than the 3rd. *Eyes* semi-oval, not very prominent, not very far removed from the base of the head. *Ocelli* large, prominent, distant, inserted close to the eyes. *Rostrum* reaching to the middle of the metasternum; basal joint ½ the length of the 2nd.

Thorax.—Pronotum trapeziform; anterior margin constricted into a narrow, flat ring; anterior angles depressed, rounded; sides slightly curved or sinuate, the margins very narrow, reflexed on the anterior half; hinder angles rather obtuse; posterior margin twice as long as the anterior, concave; disk convex, before the middle a transverse, convex callosity, not reaching to the sides, with a depression behind it. *Scutellum* large, triangular; base convex, the middle depressed, apex acute. *Elytra; Clavus* broad, slightly convex, deflected outwards; claval suture much depressed; *Corium* slightly convex; anterior margin much reflexed, nearly straight to the end of the embolium, then slightly constricted; *Embolium* broad, the end prominent, and with a slight ridge; *Cuneus* broad, triangular, deflected, outer margin slightly rounded, apex acute; *Membrane* with 4 nerves, 3 of them equidistant, the 4th close to the 3rd. *Sternum; Mesosternum* convex hindwardly, reversed-trapeziform; in front compressed to a short point; *Metasternum* short, subcordate. *Legs; thighs* long-fusiform; *tibiæ* very slightly thickened to the apex; *tarsi;* 3rd pair slightly longest; 3rd joint longer than the 2nd.

Fieber says of this genus: "In appearance an *Anthocoris*, but easy to distinguish by the long rostrum and its long basal joint, and by the different structure of the sternum."

Species 1.—Temnostethus lucorum.

Anthocoris lucorum, *Fall.* Hem. Suec. 67, 3 (1829); *Flor*, Rhyn. Liv. i, 648, 3 (1861).

— helveticus, *Dohrn*, Stett. Ent. Zeit. xxi, 162, t. 1, fig. 3 (1860).

Temnostethus luteus, *Fieb.* Wien. Ent. Mon. 269 (1860).

— lucorum, *Fieb.* Europ. Hem. 136, 2 (1861).

Black, slightly shining, with short yellowish hairs; *clavus* and *corium* unicolorous, light-brown; *membrane* dull yellowish, clear of markings.

Head.—Antennæ; 2nd joint yellow-brown or red-brown, base black, apex brown. *Ocelli* red or brown. *Rostrum* black, base brown.

Thorax.—Pronotum; sides very slightly curved, almost straight; discoidal callosity smooth, the rest finely crenate-punctate. *Scutellum* smooth, or delicately punctured behind. *Elytra; Clavus* and *Corium* unicolorous light brown; anterior margin of the latter and cuneus of a deeper tinge; *Membrane* light yellowish-brown, apical half a shade darker; nerves concolorous. *Sternum* delicately transversely crenate. *Legs; fulcra,* apex of *thighs,* and *tibiæ,* yellow-brown, apex of the latter sometimes dusky; *tarsi* brown-black; 1st and 2nd joints generally yellowish.

Abdomen glossy; above delicately crenate, almost destitute of hairs; beneath finely punctured, with more perceptible, but very short hairs; genital segments with a few strong, projecting hairs.

Length, 1½ line.

Fieber remarks of this species, "that it resembles the very pale examples of *Tetraphleps vittatus,* but is distinguished by the unicolorous, yellowish elytra, and by the sides of the pronotum being only in front narrowly reflexed."

Common on Scotch fir and larch trees, from July to October.

Species 2.—Temnostethus pusillus.

Anthocoris pusillus, *H. Schf.* Nom. Ent. i, 60 (1335); Wanz. ix, 225, t. 316, fig. 977 (1850).
— albofasciatus, *Fieb.* Weit. Beitr. 111, t. 2, fig. 10 (1836).
— lugubris, *Bohem.* Vet. Akad. Förh. 58, 13 (1852); *Flor,* Rhyn. Liv. i, 647, 2 (1860).
Temnostethus pusillus, *Fieb.* Europ. Hem. 136, 1 (1861).

Black, sides of the *pronotum* sinuate, the margins narrow and sharp; base of the *elytra* whitish; *tibiæ* orange.

Head smooth. *Antennæ* delicately short-haired; 2nd joint, in the ♂, black, or red in the middle; in the ♀ orange, with the ends only black or dusky. *Eyes* black. *Ocelli* red. *Rostrum* black.

Thorax.—Pronotum rather dull, sides sinuate, the margins very narrow and thin; discoidal callosity almost smooth, behind it transversely crenate. *Scutellum;* base smooth, behind the middle delicately crenate. *Elytra; Clavus* black or brown, sometimes yel-

lowish-brown, rather dull; *Corium* black or brown-black, slightly shining (sometimes the anterior margin broadly whitish-brown, extending still more broadly on the cuneus); close to, but not including the base, a broad, outwardly widened, transverse whitish band, posteriorly merging into the ground-colour (sometimes diminished to a spot). *Embolium* at the end whitish; *Cuneus* deep black, with fine, distant, appressed, whitish hairs; *Membrane* black, with a large, rounded, white spot at the outer and inner basal angles; more rarely entirely whitish: the ♀ often with the elytra undeveloped. *Legs; thighs* black; *tibiæ* orange, apex sometimes dusky; *tarsi* brown or black.

Abdomen shining.

Length, 1¼ line.

Fieber remarks of this species, that "it very much resembles *Anthocoris pratensis*, Fab., but is distinguished by the very sharp side margins of the pronotum, the sculpture of the pronotum and elytra, and the marking of the membrane.

Rather scarce; chiefly on oaks and beeches; Purley, near Croydon; Darenth Wood; Mickleham; Hurst Wood, Tunbridge Wells; and Southampton Common, in August and September.

Genus 3.—ANTHOCORIS, *Fall.*

Head broad; *Crown* short, convex, widened before the eyes; *Face* ½ the length of the head, central lobe broad, the end obtuse; side lobes very short and narrow; antenniferous processes very short. *Antennæ* slender; 1st joint cylindrical, reaching to the end of the face; 2nd nearly 3 times longer than the 1st, gradually a little thickened to the apex; 3rd and 4th fusiform; 3rd, ⅔rds the length of the 2nd; 4th rather longer than the 3rd. *Eyes* large, semioval, inserted near the base of the head. *Ocelli* prominent, distant, inserted close to the base of the eyes. *Rostrum* reaching to the end of the metasternum; 1st joint very short.

Thorax.—Pronotum long-trapeziform, in front contracted to a broad, slightly convex ring; anterior margin straight; sides nearly straight, or slightly sinuate, the margins very narrow, sharp, and reflexed on the 1st ½ only; hinder angles obtuse; posterior margin very concave; disk on the 1st ½ with a slight, transverse callosity, and behind it a long transverse depression. *Scutellum* very large,

base convex, the middle with a large depression. *Elytra;* sides parallel, slightly constricted at the base of the cuneus; anterior margin narrowly reflexed; *Embolium* broad posteriorly, ending with a slight ridge; *Cuneus* very long, deflected, apex acute; *Membrane* with 3 almost straight, equidistant nerves. *Sternum; Mesosternum* long, convex, in front compressed, hindwardly obtuse, in the centre a slight impressed line; *Metasternum* right angled, convex, prominent. *Legs* slender; *thighs* long-fusiform; *tibiæ* thickened to the apex; *tarsi* long, 3rd pair longest; 3rd joint a trifle longer than the 2nd.

Species 1.—ANTHOCORIS NEMORUM.

CIMEX NEMORUM, *Lin.* F. S. 953 (1761); S. N. 499, 91 (1767).
ACANTHIA SYLVESTRIS, *Fab.* E. S. iv, 76, 37 (1794); *Wolff,* Ic. Cim. 90, 84, t. 9, fig. 84 (1802).
SALDA — *Fab.* S. R. 116, 17 (1803).
LYGÆUS FASCIATUS, *Fab.* S. R. 240, 187 (1803).
ANTHOCORIS NEMORUM, *Fall.* Hem. Suec. 66, 1 (1829); *Burm.* Handb. ii, 288, 1 (1835); *Zett.* Ins. Lap. 265, 1 (1840); *Am. et Serv.* Hém. 263, 1 (1843); *Sahlb.* Geoc. Fen. 75, 1 (1848); *Flor,* Rhyn. Liv. i, 651, 5 (1860); *Fieb.* Europ. Hem. 138, 4 (1861).
RHYNARIUS SYLVESTRIS, *Hahn,* Wanz. i, 105, t. 17, fig. 56 (1831).

Elliptic, black, shining, with very short pubescence. *Antennæ;* 2nd and 3rd joints deep yellow, the apex of each black. *Pronotum;* sides narrowly margined throughout. *Elytra* smooth, pale whitish yellow; *clavus* on the inner margin, *embolium* towards the end, a large spot on the *corium,* and the *cuneus* on the posterior margin, piceous to black; *membrane* yellowish-white, posteriorly and in the centre fuscous-black. *Legs* yellow.

Head smooth. *Antennæ* finely haired, 2nd and 3rd joints deep yellow; extreme base, and apex of the 2nd, narrowly, apex of the 3rd broadly, piceous or black. *Eyes* black. *Ocelli* red. *Rostrum* black, the end of the 3rd joint brown.

Thorax.—Pronotum; sides slightly sinuate, narrowly margined throughout, the margin sharp, a little widest in front; disk; the callosity smooth, the rest finely crenate-punctate, more strongly in

the transverse depression. *Scutellum* smooth, posteriorly crenate. *Elytra* smooth, without perceptible hairs except on the cuneus, pale yellowish-white; *Corium;* anterior margin, as far as the cuneus, much reflexed, incrassated at the end of the embolium; *Clavus* on the inner margin piceous, more broadly towards the apex; *Embolium* towards the end piceous, on the apex inwardly, usually a yellowish spot; *Cuneus* delicately punctured, finely pubescent, the outer margin orange, the posterior margin broadly piceous, or sometimes the entire surface suffused with pitchy black; *Membrane* yellowish-white, the posterior 3rd fuscous-black, the colour extending broadly up the centre, but leaving the base and a large spot on each side clear. *Sternum* delicately crenate; margin of the segments yellowish. *Legs* pale orange; *thighs;* 1st pair sometimes with a black streak on the upper side; 2nd and 3rd pairs, sometimes black, except the base and apex; sometimes 3rd pair only with a black ring; *tibiæ* brown or black at the base; *tarsi;* 3rd joint piceous or black.

Abdomen beneath pitchy black, delicately crenate, with fine yellowish pubescence.

Length, 1½—2 lines.

Common on trees and bushes from June to October, also among dry leaves in winter and spring.

Individuals of this species, and also of *A. nemoralis*, are often found in the bladdery mines made on the leaves of oaks by the larvæ of the genus *Lithocolletis* (Lepidoptera); and Mr. Stainton once saw an *Anthocoris* outside one of such mines, with its rostrum thrust through the loosened lower cuticle of the leaf, sucking the juices of a larva within.

Species 2.—ANTHOCORIS NEMORALIS.

ACANTHIA NEMORALIS, *Fab.* E. S. iv, 76, 35 (1794).
CIMEX (GALLARUM ULMI), *De G.* Mém. iii, 279, 23 (1773).
SALDA NEMORALIS, *Fab.* S. R. 116, 15 (1803).
LYGÆUS AUSTRIACUS, *Fab.* S. R. 239, 181 (1803).
ANTHOCORIS NEMORALIS, *Fall.* Hem. Suec. 67, 2 (1829); *Flor*, Rhyn. Liv. i, 650, 4 (1860); *Fieb.* Europ. Hem. 137, 2 (1861).

Black, with fine appressed, yellowish hairs; 2nd joint of the *antennæ* broadly yellow-brown in the middle; side margins of the

pronotum only narrowly visible in front; *clavus* and *corium* dull yellow-brown at the base, brown or piceous posteriorly. Sides behind the pronotum parallel.

Head shining. *Antennæ;* 2nd joint yellowish, or reddish-brown; base narrowly, and the upper 3rd piceous or black, extreme apex brown. *Eyes* black. *Ocelli* red. *Rostrum* black.

Thorax.—Pronotum; side margins only visible on the 1st 3rd, very narrow and thin; disk shining, the callosity smooth, the rest finely punctured, the posterior 3rd sometimes brown or yellow-brown. *Scutellum* shining, delicately punctured, apex crenate. *Elytra; Clavus* dull, smooth; base more or less yellow, red-brown, or piceous, sometimes with only a long reddish spot on the inner side; rarely entirely piceous black; *Corium* dull, smooth; base yellow or yellow-brown; posteriorly dark brown or piceous; *Embolium* at the end narrowly yellow-brown, the colour widened internally into a small spot; *Cuneus* with longer hairs, finely punctured, shining, black or piceous, the outer margin sometimes yellowish; *Membrane* shining, white, apical 3rd, and 3 long, broad streaks above it, between the nerves, fuscous black; cell-nerve brown. When the elytra are closed the membrane appears black, with 3 large white spots in a triangle, 1 at the base and 1 on each side under the apex of the cuneus. *Sternum* shining, delicately crenate. *Legs: Fulcra* yellow-brown; *thighs* entirely yellow-brown, or brown-black on the upper side; or piceous-black, with the apex yellow-brown; *tibiæ* yellow-brown, the apex usually piceous or black; *tarsi* black-brown, the 2 basal joints usually yellowish; claws brown.

Abdomen beneath delicately crenate, shining, the genital segments with a few projecting yellowish hairs.

Length, 1½—2 lines.

Common on various trees from July to September.

Species 3.—ANTHOCORIS SAROTHAMNI.

Black, shining, with fine, longish, yellow hairs. *Antennæ* stout; black; 2nd joint rarely reddish in the middle. *Pronotum;* sides almost sinuate, the margin very narrow, and perceptible only on the 1st 3rd. *Clavus* dull, yellow-brown, toward the apex piceous; *Corium* shining, the base and sometimes the anterior margin yellow-brown; *Cuneus* black, lustrous, with a punctured coriaceous surface. Sides behind the pronotum parallel.

Head smooth. *Antennæ* black, with short, yellowish hairs; 2nd joint rarely reddish in the middle or on the basal ½. *Eyes* black. *Ocelli* red. *Rostrum* black.

Thorax.—Pronotum; sides almost sinuate, the margin very narrow, perceptible only on the 1st 3rd. *Scutellum* shining; base smooth, the rest transversely crenate. *Elytra; Clavus* dull, smooth, yellow-brown; towards the apex piceous, or rarely piceous-black, with a long orange spot towards the inner side; *Corium* shining, smooth; base, and usually the anterior margin, yellow-brown; disk posteriorly piceous or black; end of the embolium with a yellowish spot; *Cuneus* lustrous black, with a punctured coriaceous surface; *Membrane* white, with a metallic lustre; apical 3rd, and 3 long, broad streaks above it, between the nerves, black; cell-nerve black. When the elytra are closed the membrane appears black, with 3 large, white spots, as in *A. nemoralis*. *Sternum* shining; middle smooth; sides finely crenate. *Legs; fulcra* yellow-brown; *thighs* black or piceous, apex yellow-brown; sometimes the basal ½ yellow-brown, or the 1st pair only all yellow-brown; *tibiæ* deep yellow-brown; base *always* broadly piceous; apex narrowly dusky.

Abdomen beneath shining, the segments delicately crenate-punctate.

Length, 1¼—1½ line.

Found by us on old broom bushes (*Sarothamnus scoparius*) at Weybridge, in July and August (1863); about 30 specimens.

This species is very close to *A. nemoralis*, and Dr. Fieber considers it identical; but it appears to us to be quite distinct, distinguished by its smaller size, its blackness, its lustre; the *antennæ* nearly always entirely black; the base of the *tibiæ* always dark, and its habitat being restricted to the broom.

Genus 4.—Lyctocoris, *Hahn.*

Broad, oval.

Head broad, short; *Crown* very short, slightly convex; *Face* obtuse; the lobes broad, and of equal length. *Antennæ;* 1st and 2nd joints thick; 1st cylindrical, reaching to the end of the face; 2nd graduate clavate, about 2½ times as long as the 1st; 3rd and 4th thin, filiform; in length subequal. *Eyes* large, oval, as long as the crown; prominent. *Ocelli* large, distant, inserted close to the base of the

eyes. *Rostrum* reaching to the end of the metasternum; 1st joint scarcely so long as the head; 2nd 1⅔rds as long as the 1st.

Thorax.—Pronotum trapezoidal, in front without a ring; anterior margin concave, wider than the head across the eyes; anterior angles depressed, rounded; side margins thick, raised, with a slight linear impression within; posterior margin concave; disk slightly convex, hindwardly flatter, behind the middle a slight transverse depression. *Scutellum* slightly convex, posteriorly with a broad, flat depression. *Elytra* long-oval; *Clavus* convex; claval suture depressed; *Corium* flat; anterior margin reflexed; *Cuneus* deflected; *Membrane* with 1 nerve at the corner of the cell. *Sternum; Mesosternum* short, very slightly convex, posteriorly with a broad, flat depression. *Metasternum* right angled, base convex, end depressed, centre with a keel. *Legs* all alike slender; fore *thighs* and *tibiæ* thickened towards the end.

Species 1.—Lyctocoris domesticus.

Cimex domesticus, *Schill.* Isis, 738 (1834).
Lyctocoris domesticus, *Hahn*, Wanz, iii, 19 & 20, t. 79, fig. 243, & E to H (1835); *Fieb.* Europ. Hem. 139 (1861).
Xylocoris Parisiensis, *Am. et Serv.* Hém. 264, 1 (1843).
— domesticus, *Sahlb.* Geoc. Fen. 80, 1 (1848).
— (Lyctocoris) domestica, *Flor*, Rhyn. Liv. i, 665, 1 (1860).
— — distinguenda, *Flor*, Rhyn. Liv. i, 666 (1860).

Piceous, with delicate, short, luteous pubescence; *elytra* at the base broadly luteous.

Head finely punctured. *Face* more or less yellow-piceous. *Antennæ* light piceous. *Eyes* black. *Ocelli* red. *Rostrum* luteous.

Thorax.—Pronotum finely punctured behind the convexity; hinder angles luteous. *Scutellum;* base smooth, apex crenate-punctate. *Elytra* dull, finely, closely punctured; *Clavus* luteous on the basal ½ and the extreme apex, inner margin and posterior ½ usually pitchy brown; *Corium;* base broadly luteous, the rest more or less deeply piceous, except an undefined luteous spot at the inner side of the end of the embolium; *Cuneus* deep piceous, paler on the outside; *Membrane* clear yellowish-white, shining. *Sternum* pitchy brown. *Legs* luteous.

Abdomen pitchy brown, the edges of the segments often luteous.
Length, 1¾ line.
Common in autumn and winter in the refuse of corn-stacks, &c.

Genus 5.—PIEZOSTETHUS, *Fieb.*

Head short, broad; *Crown* quadrangular; *Face* in front obtuse, the lobes wide, and of equal length. *Antennæ;* 1st and 2nd joints stout, 1st cylindrical, 2nd gradually clavate, about 2½ times as long as the 1st; 3rd and 4th thin, filiform, in length subequal. *Eyes* small, not reaching to the base of the head. *Ocelli* distant, near the base of the eyes. *Rostrum* reaching to or rather beyond the base of the mesosternum; 1st joint about ½ the length of the head; 2nd about 2½ times longer than the 1st; 3rd about as long as the 1st.

Thorax.—Pronotum trapezoidal; anterior margin straight, the angles rounded and depressed; sides almost straight, the margins recurved beneath; hinder angles acute; posterior margin slightly concave; disk without a transverse callosity, in front convex, hindwardly flatter. *Scutellum* large, slightly convex, with a large, wide, central depression. *Elytra*, when developed, larger than the abdomen; *Clavus* slightly deflected outwardly, claval suture depressed; *Corium* flat, anterior margin straight; *Cuneus* suddenly deflected; *Membrane*, with 1 nerve at the corner of the cell. *Sternum; Mesosternum* in front, under the coxæ, depressed; posteriorly wide, convex, rounded, with a central linear depression; *Metasternum;* base depressed, middle compressed, arched, keeled, hindwardly flattened; xyphus rhomboidal, pointed. *Legs; thighs* strong; 1st pair thickest; *tibiæ* thickened to the end, with projecting hairs.

Abdomen beneath, 1st segment with a short point in front.

Species 1.—PIEZOSTETHUS GALACTINUS.

ANTHOCORIS GALACTINUS, *Fieb.* Weit. Beitr. i, 107, 7 (1836).
— PULCHELLUS, *Zett.* Ins. Lap. 265, 3 (1840).
XYLOCORIS ALBIPENNIS, *H. Schf.* Wanz. ix, 171, t. 315, fig. 971 (1850); *Bär.* Berl. Ent. Zeits. ii, 194 (1858); *Flor,* Rhyn. Liv. i, 669, 3 (1860).
PIEZOSTETHUS GALACTINUS, *Fieb.* Europ. Hem. 139, 1 (1861).

Black, shining; *clavus* and *corium* yellowish, rather dull; *membrane* white, lustrous.

Head smooth. *Antennæ* pitchy black, finely haired; base and apex of the 2nd joint narrowly whitish. *Eyes* black. *Ocelli* red. *Rostrum* yellow-brown.

Thorax.—Pronotum smooth, posteriorly delicately crenate-punctate. *Scutellum* smooth. *Elytra; Clavus* and *Corium* slightly shining, yellowish, the former dusky at the apex; *Cuneus* more or less piceous, sometimes only on the inner margin; *Membrane* white, lustrous, iridescent. *Legs; thighs* pitchy black; *tibiæ* and *tarsi* yellow-brown.

Abdomen shining, smooth.

Length, $1\frac{1}{4}$ line.

Plentiful near London, in spring and summer, among the straw in heaps of stable-dung in fields.

Species 2.—Piezostethus rufipennis.

Xylocoris rufipennis, *L. Duf.* An. Soc. Ent. France, ii, 106, 1 (1833); *Burm.* Handb. ii, 290, 1 (1835).
Lyctocoris corticalis, *Hahn*, Wanz. iii, 21, t. 79, fig. 244 (1835).
Xylocoris bicolor, *Scholtz*, Arb. u. Veränd. (1846).
— latior, *Muls.* An. Soc. Lin. 106 (1852).
— obliquus, *Costa*, Cent. (1852).
— (Xylocoris) rufipennis, *Flor*, Rhyn. Liv. i, 668, 2 (1860).
Piezostethus bicolor & P. rufipennis, *Fieb.* Europ. Hem. 139, 3 & 4, (1861).

Black, shining; *clavus* piceous or pitchy yellowish; *corium* dusky yellowish; *embolium* and *cuneus* pitchy black; *membrane* white.

Head smooth. *Antennæ;* 1st and 2nd joints pitchy black, with short hairs; 3rd, and 4th, pale piceous, apex of the 4th still paler. *Ocelli* red. *Rostrum* pitchy yellow.

Thorax.—Pronotum smooth, posteriorly delicately crenate. *Scutellum* smooth, with short, yellowish pubescence. *Elytra; Clavus* piceous or pitchy yellowish; *Corium* within the embolium, dusky-yellowish, rather dull; *Embolium* and *Cuneus* pitchy black, shining; *Membrane* clear white, shining. *Legs; thighs* black, apex yellowish-brown; *tibiæ* and *tarsi* yellow-brown; 3rd pair darkest.

Abdomen shining, with fine, short, whitish hairs.

Length, $1\frac{1}{4}$ line.

Rare; under loose bark of oaks and other trees, in spring.

The undeveloped form (*Xylocoris rufipennis*, L. Duf.) is common under bark. It differs from the developed form in the absence of the *membrane* of the elytra, and by the *corium* being short, obliquely truncate, and of a yellow-brown colour. It has been considered a distinct species until identified as the undeveloped form of *Xylocoris bicolor*, Scholtz, by Dr. Fieber ('Wiener Entomol. Monatsschrift,' 1863).

Genus 6.—Triphleps, *Fieb.*

Head broad, short. *Face* short, the end obtuse; central lobe broad; side lobes narrow, as long as the central lobe. *Antennæ* thickest in the ♂; 1st and 2nd joints stoutest, 2nd clavate; 3rd filiform, or obtuse fusiform; 4th, slightly fusiform, compressed. *Eyes* large, the whole length of the crown. *Ocelli* distant, inserted close to the base of the eyes, large in the ♂, small in the ♀. *Rostrum* short, scarcely reaching to the mesosternum; 1st joint only ¼th as long as the head.

Thorax.—Pronotum broad, trapeziform; anterior margin straight, a little constricted; anterior angles depressed, sides very slightly rounded, the margin sharp, slightly reflexed, widest in front; posterior margin concave, sinuate towards the hinder angles; disk transversely callous on the 1st half, with a transverse depression behind the callosity, mostly deepest outwardly; posterior half flatter. *Scutellum* large, deflected from the base into a wide, deep, transverse fovea in the middle. *Elytra;* anterior margin reflexed, slightly rounded as far as the base of the cuneus, where it is constricted; *Embolium* not wide; claval suture depressed; *Cuneus* and *Membrane* deflected posteriorly; membrane with 3 nerves. *Sternum; Mesosternum* anteriorly compressed in the middle to a point, with a deep hollow on each side of it; sides compressed; disk hindwardly convex, the middle of the posterior margin deeply notched; *Metasternum* cordate, short, broad, convex, the margin reflexed. *Legs* rather short and stout; *tarsi* short; 3rd joint longest.

Species 1.—Triphleps niger.

Salda nigra, *Wolff*, Ic. Cim. fig. 161 (1804).
Triphleps niger, ♂, *Fieb.* Europ. Hem. 140, 2 (1861).

Black, shining. *Antennæ* short and stout; *corium* in the ♂ more or less piceous. *Legs* black; *tibiæ;* 1st pair only yellow.

Head smooth. *Antennæ* short, stout; in the ♂ pitchy black; 2nd joint thickest; 3rd obtuse-fusiform; 4th, rufous: in the ♀ the antennæ are perceptibly thinner and more equal; 1st joint black; 2nd more or less dusky-yellowish, except the apex; 3rd piceous; 4th rufous. *Eyes* black. *Ocelli* red. *Rostrum* pitchy black, the junction of the 2nd and 3rd joints yellowish.

Thorax.—Pronotum in front smooth, behind the callosity finely punctured, almost crenate; sides with 2 fine, projecting black hairs. *Scutellum* smooth, the basal ½ flatly deflected to the middle; apex delicately crenate. *Elytra; Clavus* and *Corium* pitchy black in ♂, black in ♀, finely punctured, and clothed with fine short hairs; *Cuneus* deep black, punctured; *Membrane* smoke-brown, iridescent. *Legs; thighs* black; apex yellowish, on the 1st pair broadly so; *tibiæ;* 1st pair in the ♂ dusky-yellowish or light-piceous; in the ♀ clear yellow; 2nd and 3rd pairs, and all the *tarsi,* black or piceous.

Length, ¼—⅛ line.

Local. Not rare at Weybridge in June (*Dr. Power*); also at the same place in September, on the flowers of *Ulex nanus;* and at the Addington Hills, Surrey.

Species 2.—Triphleps obscurus.

Rhinarius obscurus, *Hahn,* Wanz. i, 110, t. 17, fig. 59 (1831).

Black, shining, delicately haired. *Antennæ* testaceous, in the ♂ somewhat thicker than in the ♀; 1st joint blackish in ♀; *clavus* and *corium* pale testaceous; *cuneus* pitchy black. *Legs* testaceous; *thighs;* 3rd pair in ♂, brown; 2nd and 3rd in ♀, black, except the apex.

Head smooth. *Antennæ* testaceous, thin, almost filiform; in the ♂ not much thicker than in the ♀, and the 2nd joint scarcely thicker than the others; in the ♂, the 3rd joint piceous; 4th rufous, at the base piceous; in the ♀, the 1st joint black or piceous, 4th as in the ♂. *Eyes* black or brown. *Ocelli* red. *Rostrum* piceous, the junction of the 2nd and 3rd joints yellowish.

Thorax.—Pronotum smooth, posteriorly finely crenate-punctate, sides with 2 long, projecting hairs. *Scutellum* smooth, posteriorly

slightly crenate. *Elytra; Clavus* and *Corium* pale testaceous, the hairs concolorous; *Cuneus* piceous or pitchy black, punctured; *Membrane* hyaline, light fuscous or whitish on the basal half. *Sternum* piceous in the middle. *Legs* testaceous; *thighs;* in the ♂, the 3rd pair pitchy brown; in the ♀, the 2nd and 3rd pairs black or piceous; apex testaceous; *tibiæ;* 3rd pair sometimes piceous; *tarsi;* 3rd joint piceous.

Abdomen.— Genital segments beneath, piceous.

Length, 1 line.

On flowers of *Anthemis Cotula.* On the shore at Southampton; also at Croydon, Lee, and Plumstead Common, in September.

Species 3.—Triphleps minutus.

Cimex minutus, *Lin.* F. S. 941 (1761); S. N. 723, 61 (1767).
Lygæus — *Fall.* Mon. Cim. 73, 22 (1807).
Anthocoris fruticum, *Fall.* Hem. Suec. 68, 4 (1829); *Flor,* Rhyn. Liv. i, 653, 7 (1860).
Rhinarius minutus, *Hahn,* Wanz. i, 111, t. 17, fig. 60 (1831).
Anthocoris minuta, *Zett.* Ins. Lap. 266, 9 (1840).
— compressicornis, *Sahlb.* Geoc. Fen. 77, 7 (1848).
Triphleps minutus, *Fieb.* Europ. Hem. 141, 5 (1861).

Black, shining, delicately haired. *Antennæ* in the ♂ not much thicker than in the ♀; 1st joint dusky yellowish; 2nd joint testaceous; *clavus* and *corium* pale testaceous, distinctly punctured; *cuneus* more or less piceous. *Legs* yellow.

Head smooth. *Antennæ* thin, almost filiform; 1st joint yellow-brown or dusky yellowish; 2nd in the ♂ scarcely thicker than the others, testaceous, the apex sometimes dusky; 3rd piceous; 4th rufo-piceous, base dusky. *Eyes* black. *Ocelli* red. *Rostrum* piceous, last joint yellowish, with the apex black.

Thorax.—Pronotum; the callosity smooth, the remainder distinctly but not deeply punctured. *Scutellum* delicately punctured. *Elytra; Clavus* and *Corium* distinctly punctured, pale testaceous, the former brownish at the apex; the hairs concolorous; *Cuneus* piceous, more or less dark; *Membrane* hyaline or clouded with fuscous. *Legs* yellow: in the ♀ the 3rd pair of *thighs* black or blackish, except the apex; *tarsi;* 3rd joint dusky at the apex; *claws* blackish.

Length, 1¼ line.

Very like *T. obscura*, but longer and broader, and the antennæ not so stout in the ♂.

Common everywhere from July to October, in flowers, and by sweeping; also occasionally found in winter and spring, among fallen leaves.

The foregoing 3 species are perfectly distinct, but appear not to have been always correctly distinguished; the names and synonymy are therefore rather uncertain.

Genus 7.—Brachysteles, *Muls.*

Oval, depressed.

Head short, broad, deflected; *Face* very short, obtuse. *Antennæ* with long hairs; 1st joint reaching to the end of the face; 2nd 3 times longer than the 1st, slightly clavate; 3rd ¾ths the length of the 2nd, cylindrical; 4th nearly as long as the 3rd, subfusiform. *Eyes* large, prominent. *Ocelli* large, prominent, distant, inserted near the base of the eyes. *Rostrum* stout, reaching to the mesosternum; basal joint very short.

Thorax.—*Pronotum* trapeziform, convex; anterior margin depressed, straight, shorter than the width of the head across the eyes; anterior angles rounded; sides nearly straight; side margins very narrow, a little widened in front; hinder angles subacute; posterior margin concave; disk callous in front, in the middle a transverse furrow. *Scutellum* large, triangular, convex, with a deep, transverse, oval depression in the middle. *Elytra* broad, flat to the end of the corium, thence deflected posteriorly; anterior margin constricted at the end of the embolium; *Clavus* slightly deflected to the corium; sides parallel; claval suture depressed; *Embolium* broad, anterior margin slightly rounded, deeply reflexed; *Cuneus* broad, outwardly concave, apex obtuse; *Membrane* broad, short, with 4 delicate nerves. *Sternum; Mesosternum* hindwardly convex, almost vertical to the posterior margin; *Metasternum* reverse-trapeziform, at the base convex, the middle and side margins sharply defined. *Legs* stout; *tarsi* thin, long; 2nd joint rather longer than the 1st; 3rd longest.

Species 1.—Brachysteles pilicornis.

Brachysteles pilicornis, *Muls.* Ann. Soc. Lin. 104 (1852); *Fieb.* Wien. Ent. Monats. iv, 266, 12 (1860); Europ. Hem. 141 (1861).

Black, shining, almost imperceptibly punctured, clothed with fine, subappressed, yellow hairs. *Corium* and *cuneus* piceous, outwardly broadly testaceous.

Head smooth; *Face* piceous. *Antennæ* piceous, with long hairs. *Eyes* pitchy black. *Ocelli* red, shining. *Rostrum* yellow, the base piceous.

Thorax.—Pronotum; the hairs shorter and sparser on the disk than at the sides. *Scutellum* smooth. *Elytra; Clavus, Corium,* and *Cuneus* piceous; the hairs long; anterior margin of the corium and cuneus (including nearly the whole breadth of the embolium) broadly testaceous, the colour sharply defined, and contrasting strongly with the piceous hue of the rest; *Membrane* smoke-brown, with a short white streak below the end of the corium. *Legs; thighs,* except at the apex, piceous; *tibiæ* testaceous; *tarsi* piceous.

Length, 1 line.

A single specimen, captured by Dr. Power.

Genus 8.—Cardiastethus, *Fieb.*

Head much longer than the breadth between the eyes; *Face;* central lobe broad, side lobes narrow, as long as the central lobe. *Antennæ* stoutest in the ♂, 1st and 2nd joints thickest, 1st reaching to the end of the face, 2nd nearly 3 times as long as the 1st, slightly clavate; 3rd and 4th each about ⅔rds the length of the 2nd, slightly fusiform, almost filiform. *Eyes* large, prominent, reaching to the base of the head. *Ocelli* moderate, distant, prominent. *Rostrum* reaching to the mesosternum, 1st joint very short; 2nd very long.

Thorax.—Pronotum trapeziform; sides almost straight, their margin not reflexed; posterior margin concave across the scutellum, the ends slightly rounded; disk in front with a broad callosity, not

reaching to the sides, hindwardly flatter, slightly depressed in the middle; hinder angles deflected. *Scutellum* with a wide, central depression. *Elytra* flattish, a little widened posteriorly; anterior margin sinuate to the cuneus, there but slightly constricted; *Embolium* beyond the middle suddenly widened, its anterior margin strongly reflexed; *Clavus* deflected to the corium; claval suture deeply depressed; *Cuneus* and *Membrane* deflected; *Membrane* with 4 nerves, the 2 middle ones slight, at the base approximating each other and the 4th. *Sternum; Mesosternum* hindwardly raised, very obtusely angled; *Metasternum* cordate, from the base very convex, with a middle keel. *Legs* rather long; *tarsi* very slender, on the last pair the 2nd joint more than twice as long as the 1st.

Species 1.—CARDIASTETHUS TESTACEUS.

ANTHOCORIS TESTACEUS, *Muls.* Ann. Soc. Lin. 105 (1852).
CARDIASTETHUS TESTACEUS, *Fieb.* Europ. Hem. 141, 1 (1861).

Above light reddish-brown, with fine, rather long, yellowish hairs; beneath brown. *Legs* brownish-yellow.

Head smooth. *Antennæ* finely haired; 1st and 2nd joints brownish-yellow, the end of the 2nd brown; 3rd and 4th piceous. *Eyes* black. *Ocelli* red. *Rostrum* yellow.

Thorax.—Pronotum; the callosity smooth, the remainder finely punctured. *Scutellum* delicately punctured. *Elytra; Embolium* inwardly, *Cuneus* outwardly, piceous; *Membrane* fuscous, with a yellow spot next the apex of the cuneus. *Sternum; Prosternum* brownish-yellow; *Meso-* and *Metasternum* brown. *Legs* brownish-yellow; *tarsi;* 2nd and 3rd joints dusky.

Length, 1 line.

Rare. One specimen captured by Mr. Ernest Adams, locality not recorded, and another in our possession of which also the locality is unknown.

Genus 9.—XYLOCORIS, *L. Duf.*

Narrow, elongate, linear, flat.

Head elongate, narrowed behind the eyes into a short neck;

Crown quadrate; *Face* short, narrow, cylindrical, the end obtuse; side lobes very narrow. *Antennæ* slender, 1st joint reaching almost to the end of the face; 2nd slightly clavate, 3 times as long as the 1st; 3rd and 4th thinnest, each about ½ as long as the 2nd, 3rd filiform, 4th slightly fusiform. *Eyes* oval, prominent in front. *Ocelli* large, inserted between the eyes close to the base of each. *Rostrum* reaching beyond the 1st pair of coxæ; 1st joint short; 2nd long; 3rd more than ½ the length of the 2nd.

Thorax.—Pronotum trapeziform; almost uniformly flat, with a longitudinal, linear, central depression; anterior angles deflected; sides almost straight, the margin in front incrassated; posterior margin regularly concave from end to end. *Elytra; Embolium* narrow, widened and concave beyond the middle; *Cuneus* rounded at the apex, but wider than the base of the membrane; claval suture depressed; *Membrane* with 4 equidistant nerves. *Sternum; Mesosternum* narrowed behind, broadly obtuse, with a middle keel; *Metasternum* cordate, flat, the margin reflexed. *Legs; thighs* broad, fusiform, the 2nd pair shortest and narrowest; *tibiæ;* 1st pair a little widened to the apex; *tarsi* slender; 3rd pair longest; 2nd joint longest.

Species 1.—Xylocoris ater.

Xylocoris ater, *L. Duf.* An. Soc. Ent. Fr. ii, 106, 2, pl. 6, b, fig. 3 (1833); *Burm.* Handb. ii, 290, 2 (1835); *Bär.* Berl. Ent. Zeits, ii, 196 (1858); *Fieb,* Europ. Hem. 142, 1 (1861).

Anthocoris obscurella, *Zett.* Ins. Lap. 265, 4 (1840).

Xylocoris obscurellus, *Sahlb.* Geoc. Fen. 81, 3 (1848).

— (Xylocoris) ater, *Flor,* Rhyn. Liv. i, 667, 1 (1860).

Black, smooth, shining.

Head.—Antennæ; 1st joint black; 2nd yellowish-brown; 3rd and 4th piceous. *Eyes* black. *Ocelli* red. *Rostrum* piceous, the end yellow.

Thorax.—Pronotum sometimes piceous on the posterior margin. *Elytra* black or piceous; *Embolium* black; *Membrane* fuscous, the base paler. *Legs; thighs* black; *tibiæ* and *tarsi* yellowish-brown.

Length, 1—1¼ line.

Gregarious, under the loose bark of dead firs, and other trees, nearly all the year round.

Family 3.—ACANTHIIDÆ.

Genus 3.—Acanthia, *Fab.*

Flat, broad, ovate.

Head broad, convex, sides behind the eyes straight; *Face* long, broad, convex, triangular; the base of the triangle being in front, projecting between the antennæ; the lobes not defined; antenniferous processes very stout and much deflected: underside with a rostral channel. *Antennæ;* 1st joint not reaching to the end of the face, stout; 2nd stout, 4 times as long, but not so thick as the 1st, very slightly thickened to the apex; 3rd and 4th very thin, filiform, 3rd as long as the 2nd, 4th ⅔rds as long as the 3rd. *Eyes* inserted at the front of the sides of the head, large, somewhat flattened, prominent. *Rostrum;* the joints in length subequal; 1st at the base enclosed by the *labium* and cheek-plates; 2nd broadest; 3rd thinnest; apex acute.

Thorax.—Pronotum sub-reniform, much wider than long; anterior margin very concave, not raised into an annulus; side margins foliaceous, more or less reflexed, rounded, in front projecting; exterior angles rounded; sides gradually narrower to the hinder angles, which are obtuse, almost right angled; posterior margin straight; disk concave, posteriorly depressed, with a strong ridge within the hinder angles. *Scutellum* broad, short, triangular; rather convex; *Elytra* without clavus, cuneus, or membrane; *Corium* as wide, but scarcely so long as, the 1st segment of the abdomen; posterior margin slightly rounded. *Wings* wanting, or rudimentary. *Sternum; Mesosternum* in the centre, between the coxæ, with a long, flat, trapeziform plate, which hindwardly projects over the metasternum. *Legs* strong; *coxæ;* 1st pair close together; 2nd and 3rd pairs laterally distant; *thighs* all subclavate, thickest at the base; *tibiæ* of equal size throughout; *tarsi;* 1st joint short; 3rd longer than the 1st and 2nd together; *claws* long.

Abdomen oval, flat, base much wider than the pronotum; connexivum very narrow. Underside, on the 2nd segment, in the middle, a long, thick, trapeziform, flat plate, directed forwards and joined to the plate of the mesosternum; in the ♂ a ridge extends from each side of the plate as far as the 4th segment.

Species 1.—Acanthia lectularia.

Cimex lectularius, *Lin.* F. S. 909 (1761); S. N. 477, 1 (1767); *De G.* Mém. iii, 195, 35, t. 17, figs. 9—14 (1780); *Curt.* B. E. xii, fig. 569 (1835); *Hahn*, Wanz. iii, 17, t. 79, fig. 242 (1835).

Acanthia lectularia, *Fab.* E. S. iv, 67, 1 (1794); S. R. 112, 1 (1803); *Wolff*, Ic. Cim. 127, 121, t. 13, fig. 121 (1804); *Fall.* Hem. Suec. 141, 1 (1829); *Burm.* Handb. ii, 253, 1 (1835); *Zett.* Ins. Lap. 271, 1 (1845); *Flor*, Rhyn. Liv. i, 672, 1 (1860); *Fieb.* Europ. Hem. 135, 1 (1861).

Red-brown, clothed with fine, short, yellowish hairs, and generally covered with white dust.

Head and *Pronotum* finely punctured. *Elytra* with large, deep, distant punctures. *Abdomen* mottled with black; above perceptibly crenate-punctate, beneath shagreened.

Length, 2½—2¾ lines.

Too common in houses everywhere; the blood-sucking pest of the human race.

The Rev. Leonard Jenyns, in the 'Annals of Natural History,' vol. iii, described 3 species of *Cimex* which belong to this genus, but having no specimens of them to refer to we subjoin his descriptions verbatim.

Species 2.—Acanthia Columbaria.

Cimex columbarius, *Jenyns*, An. N. H. iii, 242, 244, 2, pl. 5, fig. 1 (1839).

"Ferrugineo-ochraceus; thorace profunde emarginato, lateribus reflexis; abdomine orbiculato, apice subacuto; antennis articulo tertio quarto paulo longiore."

"Long. vix 2¼ lin. Hab. in Columbis.

"On comparing this species with the common house-bug, it will be found to be smaller, and of a more orbicular form. The antennæ

are shorter, and the joints not quite so slender, and the difference in length between the 3rd and 4th joints is not so considerable. The thorax is rather less hollowed out in front, the anterior angles less produced, and the sides less reflexed. The abdomen more nearly approaches to round, the lateral margins being very much curved, and the greatest breadth exactly in the middle; whereas in the house-bug the lateral margins are at first but little curved, and the greatest breadth rather behind the middle. The colours, as well as the punctures and the degree of pubescence, are similar in the two species.

"Very lately I have been favoured by Mr. Westwood with specimens of this species found on pigeons, which, though often met with before, has not been generally considered as distinct from the one found in houses."

Species 3.—Acanthia Hirundinis.

Cimex Hirundinis, *Jenyns*, An. N. H. iii, 243, 244, 3, pl. v, fig. 2 (1839).

"Fusco-ferrugineus; thorace leviter emarginato, lateribus planis; abdomine ovato, apice subacuto; antennis brevibus, articulis tertio et quarto subæqualibus.

"Long. 1¼ lin. Hab. in nidis *Hirundinis urbicæ*.

"This species is rather less than the *C. Columbarius*, and in respect to form, different from both that and the *C. lectularius*. The antennæ are comparatively short, and the 3rd joint is scarcely, if at all, longer than the 4th. The eyes are not so prominent. The thorax is much less hollowed out in front, the anterior angles but little produced, and the sides scarcely at all reflexed. The scutellum is wider at the base, or more transverse, and does not project so far backwards. The elytra are less coarsely punctured. The abdomen is not so broad, and more rounded at the apex; the sides regularly curved. The whole insect is more pubescent. The colour is ferruginous, inclining to testaceous, darker than in the common bed-bug, and the head and thorax are much clouded with fuscous. In one specimen the legs are spotted, at or near the joints, with this last colour. There are also some fuscous spots on the abdomen. The

young, or *pupæ*, have the abdomen much narrower than the perfect insect, inclining to oblong.

"Swarming in martins' nests in Cambridgeshire."

We saw specimens of this species in the collection of the late Mr. John Curtis, found in martins' nests at Tunbridge Wells. The narrower form and stronger pubescence were in striking contrast with *A. lectularia*.

Species 4.—Acanthia Pipistrelli.

Cimex Pipistrelli, *Jenyns*, An. N. H. iii, 243, 244, pl. v, fig. 3 (1839).

"Ferrugineo-ochraceus, nitidus; thorace profunde emarginato, lateribus paulo reflexis; abdomine ovato, postice attenuato; antennis articulo tertio quarto longiore.

"Long. 2 lin. Hab. in *Vespertilione Pipistrello*.

"The antennæ of this species are of an intermediate length between those of the *C. lectularius* and those of the *C. columbarius*; and the 3rd joint is obviously longer than the 4th. The eyes are prominent. The thorax has a moderately deep excavation in front, and the sides are partially reflexed. The abdomen is narrower than in either of the above-named species, and much more attenuated posteriorly, the greatest breath being rather before the middle. The thighs are more incrassated. The whole insect is very pubescent, approaching to hispid, and rather coarsely punctured. The colour is dark ferruginous-ochre, glistening with a faint metallic or sub-œneous hue, not perceptible in any of the other species. The legs and antennæ are a shade paler than the abdomen, and, as well as this last, without spots.

"I have seen but one specimen, taken in Cambridgeshire."

Family 4.—CERATOCOMBIDÆ.

Genus 1.—Ceratocombus, *Sign.*

Long oval, convex.

Head seen from above, indistinctly 5-sided, broad, convex, apex obtuse; from the side almost conical, thick. *Face* very short, central lobe prominent. *Antennæ* flagellate, with long hairs; 1st joint stout, very short, clavate, not reaching to the end of the face; 2nd stout, clavate, 3 times longer than the 1st; 3rd thin, gradually finer from the base, twice as long as the 2nd; 4th rather shorter than the 3rd, extremely fine. *Eyes* round, moderate. *Ocelli* very small, close to the upper margin of the eyes. *Rostrum* long, aculeate, reaching to the 2nd segment of the abdomen; 1st joint not ½ so long as the head; 2nd stout at the base, nearly 4 times longer than the 1st; 3rd thin, not so long as the 2nd.

Thorax.—Pronotum convex, subquadrangular, almost trapeziform, a very little widened hindwardly; anterior margin straight, nearly as long as the width of the head across the eyes; sides with a deep fovea anteriorly, and a smaller one above behind the anterior margin; side margins very narrowly reflexed, and in the least degree constricted opposite the fovea, the constriction also just visible behind the anterior margin; posterior margin concave across the scutellum. *Scutellum* narrow, convex, pointed. *Elytra* oval, convex, of one thin, pergamentous texture throughout, the distinction of the parts (except the clavus) imperceptible; the inner margins straight, meeting for more than ½ the length, then by reason of the convexity roundly divergent; anterior margin reflexed throughout, deepest on the basal ½; *Clavus* narrow, with parallel sides; the junction of the regions of the embolium and cuneus barely indicated; nerves very fine, on the basal portion of the disk imperceptible, more hindwardly 2, longitudinal, subparallel nerves, united posteriorly and forming a long median cell, from the end of which 1 straight nerve goes nearly to the apex, and from the outer side 2 similar short nerves go obliquely to the anterior margin, one of them from just above the end of the cell, the other higher up but below the middle of the anterior margin; there is also a nerve faintly indicated within and parallel to the anterior margin (in the region of the embolium). *Sternum;*

Mesosternum obtuse, prominent, with a rostral channel; *Metasternum* obtuse, depressed. *Legs* rather long and stout, 2nd pair shortest; *thighs* flattened; *tibiæ;* 1st pair thin, widened to the apex; *tarsi;* 3rd pair thinner and longer than the others, 1st joint very short; *claws* very short.

Species 1.—Ceratocombus muscorum.

? Anthocoris coleoptrata, *Zett*, Act. Holm. 174, 24 (1819).
Bryocoris muscorum, *Fall.* Hem. Suec. 153, 3 (1829).
Astemma Mulsanti, *Sign.* Ann. Soc. Ent. France, 2me ser. x, 541, pl. 16, fig. 3 (1852).
Lichenobia ferruginea, *Baerens*, Berl. Ent. Zeits. 167 (1857).
— muscorum, *Baerens*, Berl. Ent. Zeits. 189 (1858).
Ceratocombus muscorum, *Fieb.* Wien. Ent. Monats. iv, 267, t. 6, fig. 1 (1860); Europ. Hem. 143 (1861).

Smooth, slightly shining; sides of *head* and front of *pronotum* with a few long projecting hairs.

Head.—Crown piceous or black; *Face* piceous. *Antennæ* pale or yellowish-piceous, with long dark hairs; 2nd joint darker before, but yellowish at, the apex. *Eyes* brown. *Rostrum* yellowish.

Thorax.—Pronotum black. *Scutellum* blackish-brown. *Elytra* olive-brown. *Legs* yellowish; *thighs* dusky on the edges.

Abdomen beneath piceous, the edges of the segments yellowish.

Length, 1 line.

Rare. Found among moss on the ground at Ditchingham, Norfolk, in August, and near Esher, Surrey, in September, 1864, by Dr. Power, who tells us that examples are scarce and difficult to distinguish on account of their *prima facie* resemblance to a *Dipteron*, which occurs abundantly in their habitat.

Genus 2.—Dipsocoris, *Halid.*

Head equilaterally triangular, seen from the side long triangular, thick, obtuse. *Antennæ* flagellate; 1st joint stout, not reaching to the end of the face; 2nd almost twice as long as the 1st; 3rd about 2⅔rds as long as the 2nd, filiform, thicker at the base; 4th about

¾ as long as the 2nd, filiform. *Eyes* rather small. *Ocelli* small, close to the upper margin of the eyes. *Rostrum* short, thick, reaching to the middle of the mesosternum; 1st joint as long as the head, 2nd about ⅔rds of the 1st.

Thorax. — *Pronotum* short trapeziform, transversely convex. *Elytra* sub-membranous, very broad, rounded posteriorly; *Clavus* very narrow at the base, afterwards widened into a triangle; *Corium;* on the anterior side bounded inwardly by a nerve, a large triangle is formed, the broad end of which joins the cuneus, the middle space membranous, with 2 parallel nerves arising at the base, the inner one running into the clavus at its widest part, and extending beyond it, the outer one curving to the base of the cuneus, emitting outwardly beyond its middle a transverse nerve, thus forming 2 cells; *Cuneus* long, broad, and pointed; below it, on the membrane, 2 sub-parallel nerves arise near the end of the clavus, join beyond the middle of their length and diverge to the anterior margin, thus forming 2 long cells; the rest of the *Membrane* without nerves, very broad, rounded, and projecting inwardly. *Wings* with 1 straight sub-marginal nerve, with a long cell on its inner margin; 1 long nerve below it, and 1 short basal nerve still lower. *Sternum; Mesosternum* depressed, somewhat prolonged posteriorly, obtuse, notched, with a short furcate line; *Metasternum* broad, short, with an obtuse point. *Legs; thighs* rather broad, flat; *tibiæ;* 3rd pair long; *tarsi;* 1st pair short; 1st joint very short, 2nd twice as long as the 3rd; claws as long as the 3rd joint, curved at the base.

Species 1.—DIPSOCORIS ALIENUM.

CRYPTOSTEMMA* ALIENUM, *H. Schf.* Panz. F. G. 135, 11.
DIPSOCORIS ALIENUM, *Halid.* N. Hist. Rev. ii, 61, pl. 2, fig. 3 (1855); *Fieb.* Europ. Hem. 143 (1861).

Olive-brown with a silky gloss, and very fine, short, appressed hairs.

Head yellowish-brown with strong projecting hairs. *Antennæ* brown, with long, very fine, projecting hairs. *Ocelli* red.

Thorax.—Elytra; the nerves deeper brown than the ground

* Used before in *Coleoptera.*

colour; the base of the *Cuneus* with a delicate whitish line. *Legs* yellowish-brown.

Length, ♂ 1½; ♀, 1 line.

"Inhabits the banks of rivers throughout the summer, gliding among the wet gravel, its silky down protecting it from the wet. It takes flight readily, even off the surface of water. The yellowish larvæ and pupæ are found in the same situation, leaping like the perfect insect. In its habits it most resembles the *Saldæ*, but shuns the light more than they do." (*Haliday*, l. c.)

Rare. On the banks of a rivulet near the Black Lakes, Kerry, Ireland, in August (*Haliday*); at the edge of a mountain-stream at Bettws-y-Coed, N. Wales; at Ivybridge, S. Devon, in summer (*Wollaston*); banks of the Almond, near Edinburgh, May (*D. Sharp*).

Section 11.—*OCULATINA.**

Family 1.—SALDIDÆ.

Genus 1.—Salda, *Fab.*

Oval, convex, especially beneath.

Head from above, 5-sided, behind the eyes slightly prolonged; *Crown* between the eyes narrow, parallel; before the eyes produced into a long, vertical clypeus, of which the anterior margin is sometimes much incrassated, forming on each side an angular projection from the eye to the base of the central lobe of the face; *Face* vertical, in a line with the clypeus; central lobe thick, convex; side lobes short, obtuse; cheek-plates long, broad, rounded, partly covering the base of the rostrum. *Antennæ;* 1st joint short, cylindrical; 2nd thickened to the apex, at least twice as long as the 1st; 3rd and 4th more or less fusiform, sometimes stout, each about ⅔rds the length of the 2nd. *Eyes* very large, subreniform, projecting outwards and backwards. *Ocelli* in the middle of the crown, between the eyes, and near together. *Rostrum* reaching to or beyond the 2nd pair of coxæ; 1st joint short; 2nd twice as long as the 1st; *labrum* long triangular, as long as the 1st joint.

* Page 38.

Thorax.—Pronotum trapeziform; the 1st ½ or ⅔rds with a strong, transverse callosity, which does not extend to the sides, and posteriorly is often bounded by a furrow, the surface with 1 or 3 foveate depressions; sides deflected or flattened in the middle; posterior margin, across the scutellum, concave. *Scutellum* large, triangular; in the middle a slight, transverse incision, before which is mostly a large depression. *Elytra* oval, convex; *Corium;* anterior margin recurved or flattened on the basal ½, sometimes on the whole length; posterior margin straight as far as the 4th nerve of the membrane, thence divergent to the point of the clavus; membrane-suture strong; *Membrane* broad, rounded posteriorly, from the inner basal angle, extending up the inner margin of the corium, at the outer basal angle and the anterior margin coriaceous; nerves, 5, not extending to any of the margins, but roundly connected at their ends, leaving a clear space all round them. *Sternum: Prosternum;* xyphus triangular; *Mesosternum* short, in the region of the coxæ with 2 deep depressions, middle furcate; xyphus very short; *Metasternum* short angled, depressed; in the middle with a sub-rhomboidal convexity. *Legs* of like form, 3rd pair longest; *thighs* flattened; *tarsi* long, longest on the 3rd pair; 1st joint very short; 2nd scarcely longer than the 3rd; *claws* long, curved.

Abdomen.—Connexivum deep, reflexed. *Genital segments;* in the ♂ 2, the 1st formed like the abdominal segments, but shorter and narrower; the 2nd much longer, visible above and beneath; above, it forms, in the middle, a keeled plate, at the end with curved horny process on each side; beneath convex, narrowed to the rounded apex, and prolonged into 2 short processes. In the ♀ above (when the elytra and wings are removed) all 3 segments are visible, the ends of the plates of the 1st segment reaching to the end of the 3rd segment; beneath (under the prolonged 6th abdominal segment) are the 2nd and 3rd segments, each in the middle with a somewhat broad and long cleft, filled up by the 2 narrow, prolonged plates of the 1st segment, which at the base enclose the ovipositor.

All the species live on the margins of ponds and rivers, or on the sea-coast, running, jumping, and flying with great activity, and very difficult to catch.

Species 1.—Salda pilosa.

Salda pilosa, *Fall.* Mon. Cim. 29, 3 (1807); Hem. Suec. 74, 5 (1829); Burm. Handb. ii, 216, 2 (1835); *Fieb.* Wien. Ent. Monats. iii, 233, 1 (1859); Europ. Hem. 144, 1 (1861).
Acanthia pilosa, *Germ.* Faun. Ins. 10, 15,

Dusky-luteous; above clothed with close, short, yellow hairs, mixed with longer, stronger, projecting black hairs; beneath with yellow hairs only. *Head, pronotum,* (except the sides) and *clavus* (except the apex), dull black.

Head.—Crown black, luteous next the eyes; *Face* luteous. *Antennæ* clothed with appressed yellow hairs, mixed with long, prominent, black hairs; 1st and 2nd joints luteous, 1st piceous beneath; 3rd and 4th brown or black. *Eyes* piceous, more or less yellow round the base on the upper side. *Ocelli* luteous, black in the centre. *Rostrum* luteous, 2nd and 3rd joints brown beneath.

Thorax.—Pronotum short trapeziform; sides with a more or less parallel, broad luteous stripe, which is sometimes widened posteriorly; disk at $\frac{2}{3}$rds of its length, with a slight transverse channel, deepest outwardly. *Scutellum* black, sometimes with the apex, and a streak on the sides, luteous. *Elytra; Clavus* black, sometimes luteous on the last 3rd; *Corium* luteous, or piceous with luteous streaks, or luteous with the base and a posterior spot on the anterior margin black; anterior margin reflexed; *Membrane* luteous, smooth; nerves brown except at the base, and with prominent short hairs. *Sternum* black; *Prosternum* with the sides and round the base of the coxæ broadly ochreous, anterior and posterior margins narrowly ochreous; *Mesosternum* with a large ochreous spot at the base of the coxæ. *Legs* luteous; *coxæ* piceous at the base; *thighs* paler, with long yellowish projecting hairs, and a few black ones towards the apex; on the upper side, large brown spots in 2 rows, confluent towards the apex; hinder side with a piceous stripe; under, anterior and outer sides 1 row of brown spots; *tibiæ* at the end brown, with rows of fine black spines mixed with long black and shorter yellow hairs; *tarsi* finely haired, with long, spinose, black hairs beneath and at the ends of the joints; the end of the 2nd and 3rd joints piceous.

Length, 2—2¼ lines.

Rare. New Passage, Bristol (*Reed*); old specimens from the collection of W. Backhouse, Esq., Darlington; "June 30; running on the muddy shores at Broughton, Lancashire; Burnham, Norfolk, and Sandwich, Kent" (*Curtis*, B. E. p. 548).

Species 2.—SALDA LATERALIS.

SALDA LATERALIS, *Fall.* Mon. Cim. 30, 4 (1807); Hem. Suec. 74, 6 (1829); *Fieb.* Wien. Ent. Monats. iii, 233, 2 (1859); Europ. Hem. 144, 2 (1861).

Short broad oval, black, shining, with very short, close hairs; the *Face*, 1st and 2nd joints of the *antennæ*, sides of the *pronotum*, basal ½ of the outer side of the *corium*, *sternum*, and *legs*, yellow.

Head.—*Crown* black, the hairs yellow; *Face* pale yellow. *Antennæ*; 1st and 2nd joints brown-yellow, the 1st with a brown streak beneath; 3rd and 4th brown or piceous. *Eyes* piceous. *Ocelli* red. *Rostrum* piceous; 1st joint, base of the 2nd, and the *labrum*, pale yellow.

Thorax.—*Pronotum* very short trapezoidal; anterior margin thick, prominent; hinder angles rounded; posterior margin very concave; disk; the smooth transverse callosity occupies the 1st ⅔rds of the length, in its middle a large depression, and a small one on each side of it, behind the callosity finely punctured; sides deflected, finely crenate, yellow, the colour narrow in front gradually widens to the posterior margin, and is dentate on its inner side. *Scutellum* slightly convex, finely crenate; on the basal ½ a large subquadrate depression. *Elytra; Clavus* pitchy black, the base and a long spot at the apex yellow; *Corium* black, the basal ½ outwardly, broadly yellow; apex with a large, yellow, oval spot; *Membrane* piceous-yellow, suffused with piceous at the base; nerves piceous. *Sternum* pale yellow, the middle black. *Legs* yellow, with fine short hairs; *thighs* with a brown line on the inner and under sides, less perceptible on the 1st pair; *tibiæ;* at the base and apex a brown spot; 2nd and 3rd pairs with distant, black, projecting hairs; *tarsi;* base of the 1st and the apex of the 3rd joint narrowly brown.

Length, 1¾ line.

Rare. A single specimen taken casually; locality unknown.

Species 3.—Salda pulchella.

Acanthia pulchella. *Curt.* B. E. xii, p. and pl. 548 (1835).
— bicolor, *Curt.* B. E. xii, p. 548 (1835).
Salda pulchella, *H. Schf.* Wanz. ix, 131, t. 308, fig. 947 (1850); *Fieb.* Wien. Ent. Monats. iii, 234, 4 (1859); Europ. Hem. 144, 4 (1861).

Ovate, black, slightly shining. *Antennæ;* 1st and 2nd joints (and sometimes the 3rd) brownish-yellow; *pronotum;* sides broadly pale ochreous. *Elytra* variable in colour; in the ♂ usually black; anterior margin of the *corium* broadly pale ochreous, interrupted before the apex by a large piceous blotch; *membrane* ochreous, suffused with fuscous: in the ♀ the *corium* usually dull ochreous, more or less suffused with fuscous, with a posterior black, marginal spot; *membrane* dull ochreous; *thighs* pale ochreous, with 2 long, brown streaks; *tibiæ* ochreous, in the ♂ yellow-brown.

Head.—*Crown* black, in front with fine yellow hairs; *Face* pale ochreous. *Antennæ* with fine, short, black hairs; 1st joint yellow, brown beneath; 2nd yellow, brownish, or brown (usually palest in the ♀); 3rd and 4th piceous, the 3rd rarely brown. *Eyes* piceous. *Ocelli* black. *Rostrum* piceous, 1st joint, base of 2nd, and the *labrum*, yellow.

Thorax.—*Pronotum* short trapeziform, the callosity with a large depression in the centre and a small one on each side of it, before and behind it a row of very fine punctures; sides pale ochreous, in the ♂ in an almost parallel stripe, somewhat narrower at the posterior margin; in the ♀, the ochreous colour widened posteriorly and going round the posterior angle of the callosity; sides and posterior portion finely punctate-crenate. *Scutellum* finely crenate, the basal ⅓ with a large, subtrapezoidal depression, of which the posterior margin is rather sharply defined; the apical ⅓, at times, with 2 large brown-yellow spots. *Elytra; Clavus* and *Corium* with rather large punctures and very short hairs; *Clavus* in the ♂ black, in the ♀ ochreous or clouded with brown; *Corium* in the ♂ black, the outside on the basal ⅓ broadly ochreous, the colour inwardly dentate;

beyond the middle a broad, piceous blotch followed by a large, oval, ochreous spot; apex piceous: in the ♀ ochreous, with a brown marginal spot beyond the middle, or with a central, diagonally transverse, brownish band, more or less defined, ending in a darker blotch on the margin, sometimes forming 3 angulated spots; *Membrane* dull ochreous, in the ♂ suffused with brown; nerves brown. *Sternum* black, the margin of the pro- and mesosternum, and the apex of the coxæ, pale ochreous. *Legs; thighs* with fine hair, pale ochreous, the inner and posterior sides with a strong piceous line; *tibiæ* in the ♂ yellow-brown, in the ♀ ochreous, with distant, strong, black hairs, base and apex in both sexes usually piceous; *tarsi* ochreous, hairy beneath, and with longer black hairs at the junction of the joints; 1st joint, and apex of the 3rd, piceous.

Abdomen black; beneath, in the ♀, the apex ochreous.

Length, ♀, 1½; ♂, 2 lines.

Common at Lymington Salterns, Hants, in May; Deal, August. "Isthmus of Portland" (*Dale* and *Curtis*).

Species 4.—SALDA ORTHOCHILA.

SALDA ORTHOCHILA, *Fieb.* Wien. Ent. Monats. iii, 234, 6 (1859); Europ. Hem. 145, 5 (1861).
— LITORALIS, *Fab.* S. R. 115, 13 (1803) non *Lin.*; *Burm.* Handb. ii, 216, 3 (1835).
— LUTEIPES, *Flor*, Rhyn. Liv. i, 717, 6 (1860) non *H. Schf.*
LYGÆUS SALTATORIUS, *Panz*, F. G. 92, 13, *non* Lin.

Ovate, black, slightly shining, clothed with fine, short, yellowish hairs. *Elytra* dull, the hairs clearer yellow; *clavus* with one posterior large yellow spot; *corium* with 3 rows of 3 or 4 large, long, irregular spots between the nerves, and a posterior marginal spot, yellow.

Head.—The hairs very close and appressed; *Clypeus* and lobes of the *Face* brownish-yellow or yellow. *Antennæ* black, with fine, longish, projecting hairs; 1st joint brownish-yellow above. *Eyes* piceous, with light-brown curved lines. *Ocelli* yellow. *Rostrum* black, the last joint piceous; *labrum* yellowish in the middle.

Thorax.—*Pronotum* short-trapeziform, narrow in front, sides almost straight, the margins slightly reflexed; anterior angles

greatly depressed; hinder angles well defined, within them convexly raised; posterior margin almost squarely concave across the scutellum; disk with the callosity almost smooth, prominent but not sharply defined, the central fovea large, the side ones very small, the anterior margin and posterior portion finely punctured. *Scutellum;* basal ½ shagreened, the depression large, shallow, not sharply defined; apical ½ slightly transverse-crenate, shining. *Elytra; Clavus* and *Corium* dull, the hairs golden yellow; *Clavus* with 1 large, long, yellow spot towards the apex; *Corium;* between the nerves 3 rows of large, long, irregular yellow spots (mostly 3 in the outer row, 4 in the 2nd, and 2 in the 3rd), and a larger yellow spot on the anterior margin opposite the last spot in the 1st row; *Membrane* deep, dull ochreous; the base (except about the 2nd nerve) narrowly, about the 1st nerve broadly, and as an irregular blotch about the 3rd and 4th nerves, black. The 1st nerve is usually pale from just beyond its base, and between it and the margin of the membrane is a long, black blotch. *Legs: coxæ;* the base of the 1st pair more or less yellowish, yellow or yellow-brown; *thighs;* on the inner side, more or less pitchy black or brown, or with only 2 or 3 brown spots; *tibiæ* stout, with projecting black hairs in rows, base and apex pitchy black, middle often brown; *tarsi;* 1st and 3rd joints piceous.

Length, 1½—2 lines.

Addington Hills, August; "Spridlington, Lincolnshire; Snowdon; Llangollen; Holyhead" (*Wollaston*); "Ventnor" (*G. Lewis*).

Species 5.—Salda saltatoria.

Cimex saltatoria, *Lin.* F. S. 964 (1761); S. N. 500, 93 (1767).
Lygæus saltatorius, *Wolff,* Ic. Cim. 77, 74, t. 8, fig. 74 (1800); *Fab.* S. R. 115, 13 (1803).
Salda saltatoria, *Fab.* S. R. 239, 14 (1803); *Fall.* Hem. Suec. 73, 3 (1829); *Hahn,* Wanz. ii, 83, t. 55, fig. 167 (1834); *Zett.* Ins. Lap. 268, 6 (1840); *Sahlb.* Geoc. Fen. 151, 3 (1848); *Fieb.* Wien. Ent. Monats. iii, 235, 7 (1859); *Flor,* Rhyn. Liv. i, 713, 4 (1860); *Fieb.* Europ. Hem. 245, 7 (1861).
— littoralis, *Burm.* Handb. ii, 216, 3 (1835).
— Zosteræ, *Am. et Serv.* Hém. 405, 2 (1843).

Oval, convex, black, densely clothed with very short yellow hairs. *Clavus* with a narrow, pointed, subapical, yellow spot; *corium;* on the anterior margin 2 long yellow spots, interior to these a row of 3 spots, the 2nd and 3rd round and white; beyond these a faint, long, yellow ring on the basal ½ of the disk, followed by a long yellow streak. *Legs* yellow.

Head.—*Clypeus*, on its anterior margin, and the *Face*, pale or dusky yellow. *Antennæ* black, 1st joint above, and generally the 2nd before the apex, yellow-brown. *Eyes* black. *Ocelli* reddish. *Rostrum* piceous; *labrum* yellowish.

Thorax.—*Pronotum* roundly narrowed to the front; sides flattened, but raised within the hinder angles, the margins rounded, narrowly reflexed; posterior margin deeply, somewhat squarely concave across the scutellum, the ends roundly produced over the base of the elytra; disk very finely punctured, the callosity occupying nearly ⅔rds of the length, the posterior furrow deep, the single central fovea deep. *Scutellum* convex, slightly shining; basal ½ finely punctured, posterior ½ very finely crenate; the depression large, posteriorly straight. *Elytra* dull; *Clavus* with a narrow, pointed spot before the apex; *Corium;* sides widely flattened as far as the middle; the margin with a long, narrow, yellow spot in the middle, and a shorter one before, and not reaching to, the apex; disk outside the 1st nerve, with 3 spots in a row, 1 longish, dull yellow, before the middle, the 2 others round and whitish, 1 of them rather beyond the middle, the other opposite the 2nd marginal spot; beyond the 1st nerve, on the basal ½, a long faint ocellus, formed by a narrow, yellowish, oval ring, enclosing a space of the ground colour, its basal end being clearer; in a line with this, near the posterior margin, a long yellow streak (sometimes there is a faint, yellowish, interrupted line more towards the inner margin; and sometimes the whole of the yellowish marks on the corium are of larger size, giving a more speckled appearance); *Membrane* yellowish, the suture and nerves black; the 1st nerve often yellow at its base; between the nerves, beyond the middle, a transverse row of long blackish spots; nearer the base an irregular black spot in the 2nd, 3rd, and 4th cells (sometimes in the 2nd and 3rd only); margin with a long black spot at the end of the 1st nerve, preceded and followed by a yellow spot; the rest of the margin fuscous-brown, sometimes yellowish internally. *Legs* pale yellow; *thighs* with fine,

short, yellow hairs, on the inner and outer sides with a row of brown punctures; hinder side of the 1st and 2nd pairs with a black stripe; apex narrowly black, preceded by a clear space; *tibiæ* blackish at base and apex, the 1st and 2nd pairs with a long, subannular, brown spot in the middle; 3rd pair with short, distant, black, spinose hairs; *tarsi;* 1st and 2nd joints black, the 2nd, and sometimes the base of the 3rd, yellow; *claws* brown.

Abdomen, in the ♀, the last segment beneath, posteriorly pale ochreous.

Length, 1½—2 lines.

Abundant on the margins of ponds and ditches during the summer, and in winter in moss on damp walls, &c.

This species, the commonest of the genus, is most like *S. stellata*, but may easily be distinguished from it by its oval, not egg-shaped form, and by the absence of the [-formed yellow spot on the anterior margin of the corium.

Species 6.—Salda marginalis.

Salda marginalis, *Fall.* Mon. Cim. 30, 4 (1807); Hem. Succ. 75, 8 (1829); *Sahlb.* Geoc. Fen. 154, 9 (1848); *H. Schf.* Wanz. ix, 130, t. 306, fig. 943 (1850); *Flor*, Rhyn. Liv. i, 712, 3 (1850); non *Fieb.*

— opacula, *Zett.* Ins. Lap. 268, 8 (1840); *Flor*, Rhyn. Liv. i, 719, 7 (1860).

Deep black, above dull, beneath shining. *Head*, *pronotum*, *clavus*, and *corium* with very short, appressed, golden-yellow hairs; anterior margin of the *corium* more or less broadly yellow, interrupted beyond the middle.

Head.—*Clypeus* on its incrassated margin, and the *Face*, pale yellow; central lobe with a central, longitudinal, brown line. *Antennæ* with fine short hairs; 1st and 2nd joints light brown, 3rd and 4th piceous. *Eyes* piceous. *Ocelli* red. *Rostrum* piceous; *labrum* piceous, yellowish in the middle.

Thorax.—*Pronotum* short-trapeziform, very finely punctured, the sides straight, their margins delicately reflexed; the callosity occupying the 1st ½ of the disk, its centre with 1 small impression, its posterior margin straight. *Scutellum* finely crenate-punctate.

Elytra; Clavus and *Corium* velvety black; anterior margin of the latter (except the base and a more or less broad interruption beyond the middle) yellow, the colour at first broad, widened on its inner side along the 1st nerve, into a dentate mark, then gradually narrower and wholly or partially interrupted beyond the middle, reappearing as a large triangle within the apex, or only on the margin and as an oval spot above the apex; the apex itself black; *Membrane* dull, dark yellowish, with a darker transverse band beyond the middle; sometimes in the 3rd cell, near the base, a brown spot; anterior margin, as far as the 1st nerve, more or less black; nerves brown. Sometimes, according to Flor, the entire membrane is unicolorous gray-brown. *Legs* finely haired, brownish-yellow; *thighs* piceous in the middle; *tibiæ* narrowly brown at the apex; *tarsi;* on the hinder legs more or less piceous.

Length, 1¼ line. The smallest species.

Scarce. Taken by Mr. Dale, in wet places on the heath by Lewell plantation, near Dorchester, from July to October.

Species 7.—SALDA STELLATA.

ACANTHIA STELLATA, *Curt.* B. E. 12, 548, 14 (1835).
SALDA C. ALBUM, *Fieb.* Wien. Ent. Monats. iii, 236, 10 (1859); Europ. Hem. 146, 10 (1861).
— ARENICOLA, *Flor,* Rhyn. Liv. i, 718, 7 (1860)

Short, broad-ovate, black, clothed with short yellow hairs. *Clavus* with a narrow pointed spot towards the apex; *corium* with several small yellow spots in rows, and 2 large and long on the anterior margin, of which latter the 1st is the largest, [-formed, with a large black spot on its inner side, and joined to the 1st nerve; *membrane* yellow; nerves broadly black; in each cell an oval black spot; margin at first yellow, with a large subquadrate black spot, then fuscous. *Legs* yellow; *tibiæ* black at the base and end; the 1st and 2nd pairs black or brown in the middle, on the 2nd pair forming a ring.

Head.—Clypeus with the margin yellow-brown, not prominent; *Face* and *labrum* dusky yellow-brown. *Antennæ;* 1st joint and end of the 2nd yellow-brown, the 1st black beneath; 3rd and 4th black.

Eyes black, with a yellow sinuous streak at the base. *Ocelli* small, brown, with a black pupil.

Thorax.—*Pronotum* short-trapeziform, narrow in front, sides flattened, raised within the hinder angles, the margins slightly rounded, more so in front; posterior margin concave across the scutellum, the ends roundly produced over the base of the elytra; the callosity $\frac{2}{3}$rds the length of the disk, sharply defined behind, the single central fovea deep. *Scutellum* slightly convex, basal $\frac{1}{2}$ finely punctured, apical $\frac{1}{2}$ finely crenate, the depression large and deep, its posterior margin straight. *Elytra* very broad, convex; *Corium;* sides broadly flattened on the basal $\frac{1}{2}$; anterior margin much rounded, but scarcely reflexed, about its middle a large yellow [-formed spot, with a large black dot on its inner margin joined to the 1st nerve; further down the margin a narrower, long, yellow spot, which does not extend to the black apex; on the disk are 3 series of small yellow spots, in the 1st row 1 spot at the base, 1 before the middle, and 1 next the membrane-suture, the last preceded by a round *white* spot; in the 2nd row, near the base, is a large faint ocellus, formed by a fine yellow ring, and then 2 spots; the 3rd series is formed, nearer to the inner margin, by 3 spots in a triangle; often these spots are more or less obliterated, or joined together; *Membrane* yellow; membrane-suture and base broadly black, except on each side of the base of the 2nd nerve; nerves broadly black, except the middle of the 1st, which is yellow; in each cell an oval black spot, forming a row across the middle of the membrane, and another black spot in the 3rd cell, near the base; margin with a large, subquadrate, black spot below the apex of the corium, preceded by a large, and followed by a smaller, yellow spot; the rest of the margin fuscous. *Legs* yellow; *thighs*, on the inner and outer sides a row of large brown punctures; the 1st pair black on the anterior edge; *tibiæ* black at base and apex; 1st and 2nd pairs with a long blackish or brown line on the middle of the outer side, or on the 2nd pair forming a broad ring; *tarsi;* 1st and 3rd joints piceous.

Abdomen; the last segment yellowish posteriorly in the ♀.

Length, $1\frac{1}{4}$ line.

Axwell Park, near Newcastle, May, and near Lannercost, Cumberland, June (*Bold*); Isle of Man (*Rev. H. A. Stowell*).

"10th June, Wareham; 12th August and middle of September, base and face of cliff, where it was wet, at Black-gang Chine" (*Curtis*, l. c.).

Species 8.—SALDA PALLIPES.

SALDA PALLIPES, *Fab.* S. R. 115, 12 (1803); *Fall.* Hem. Suec. 73, 4 (1829); *Zett.* Ins. Lap. 267, 4 (1840); *H. Schf.* Wanz. vi, 43, t. 194, fig. 600 (1842); *Sahlb.* Geoc. Fen. 152, 4 (1848); *Kolen.* Mel. Ent. vi, 33, 238 (1857); *Fieb.* Wien. Ent. Monats. iii, 237, 12 (1859); Europ. Hem. 146, 12 (1861).

SALDA SALTATORIA, *Guer.* Ic. t. 93, fig. 2 (1829-38).

ACANTHIA DIMIDIATA, *Curt.* B. E. xii, 548, 13 (1835).

SALDA RIPARIA, *Zett.* Ins. Lap. 267, 5 (1840); *Sahlb.* Geoc. Fen. 151, 2 (1848); *Kolen.* Mel. Ent. vi, 34, 240 (1857).

— LITTORALIS, *Am. et Serv.* Hém. 405, 1 (1843).

Elliptic, broad, black, clothed (except on the *corium*) with fine, yellow, appressed hairs. *Clavus*, except the apex, black. *Corium* with sub-erect, short, black hairs; base black, the remainder (and the *membrane*) dull, pale, yellowish white; between the margin and the 1st nerve, 2 long black spots nearly forming a streak, the 2nd spot interrupted by a white dot; between the 1st and 2nd nerves a black spot with a ring of the ground colour round it, followed by a large black spot; the remainder of the disk either clear, or spotted more or less, or suffused with black; *membrane* with black or brown nerves, between them distinct, long blackish spots in a transverse row. *Legs* yellow.

Head.—*Clypeus* on the margin fulvous; *Face;* central lobe generally fulvous. *Antennæ* black, with short hairs; 1st and 2nd joints more or less fulvous at the base and apex, or the 1st fulvous, black above and beneath. *Eyes* piceous, sometimes at the base fulvous. *Ocelli* black. *Rostrum* piceous, *labrum* fulvous.

Thorax.—*Pronotum* wide; sides flattened, the margin rounded, slightly reflexed; posterior margin very concave across the scutellum, roundly produced over the base of the elytra; disk, the callosity reaching ⅓ the length, its central fovea deep, the side impressions obsolete, the posterior furrow deep. *Scutellum* convex, the central depression deep, sharply defined behind; base punctured, apical ½ crenate. *Elytra* convex; *Clavus* black, the apex with a large or small yellow spot; *Corium* dull; base black, the colour sharply defined, the remainder of the disk pale yellowish-white; anterior

margin broadly flattened on the first 3rd, the edge black, and a black spot at the apex; between the margin and the 1st nerve, 2 long, contiguous, black spots, nearly forming a black streak, the 2nd spot interrupted by a white dot; between the 1st and 2nd nerves, on the basal $\frac{1}{2}$, a black spot with a broad ring of the ground colour round it; below the ocellus thus formed a large black spot; at the end of the 2nd nerve, a black spot sometimes extended to the inner angle; beyond the 2nd nerve, on the disk, a long black spot; the nerves black, sometimes pale posteriorly; sometimes all the black marks (except on the base) are wanting, or sometimes only part of them are present, or more rarely they are run together; *Membrane* dull pale yellowish-white, nerves black or dark brown (except the 1st, which is pale, with a black spot at its end extending to the posterior margin); in the cells between them, about the middle, a transverse row of long black spots, and sometimes a larger one nearer the base of the 3rd cell; apical margin generally fuscous. *Sternum* black. *Legs* yellow, with fine, short, yellow hairs; *thighs;* inner and outer sides with 2 rows of brown punctures, hinder side with a blackish streak, darkest on the 1st pair; *tibiæ* with strong, short, black, spinose hairs; apex black; the 1st pair with a black line on the outside; *tarsi;* end of the last joint black, claws brown.

Abdomen black; posterior margin of the segments narrowly, of the last segment broadly, yellowish.

Length, $1\frac{3}{4}$—2 lines.

Not rare at Deal, on the banks of pools of brackish water, July; "10th June, muddy places, Wareham" (*Curtis*, l. c.); "Ferriby" (*Wollaston.*)

Species 9.—Salda littoralis.

Cimex littoralis, *Lin.* F. S. 246, 915 (1761); S. N. 481, 14 (1767).
Salda zosteræ, *Fab.* S. R. 113, 1 (1803); *Burm.* Handb. ii, 216, 1 (1835); *Sahlb.* Geoc. Fen. 150, 1 (1848).
— flavipes, *Fab.* S. R. 114, 3 (1803); *Fieb.* Wien. Ent. Monats. iii, 238, 14 (1859); Europ. Hem. 147, 14 (1861).
— littoralis, *Fall.* Hem. Suec. 71, 1 (1829); *Zett.* Ins. Lap. 267, 1 (1840); *H. Schf.* Wanz. vi, 41, t. 194, fig. 599 (1842); *Kolen.* Mel. Ent. vi, 32, 237 (1857); *Flor,* Rhyn. Liv. 710, 2 (1860); *Fieb.* Wien. Ent. Monats. vii, 63 (1863).
— morio, *Zett.* Ins. Lap. 267, 3 (1840).
Sciodopterus flavipes, *Am. et Serv.* Hém. 404, 1 (1843).

Black, thickly clothed above and beneath with closely appressed yellow hairs, the head only with a few, distant, projecting black hairs; *clavus* with 1 long, subapical yellowish spot. *Corium;* anterior margin widely and roundly recurved; disk with a central row of 4 long yellow spots, and sometimes 1 or 2 others nearer the inner margin (scarcely visible unless the elytron is lifted). *Legs* yellow-brown or yellow.

Head.—Face with a few projecting, long, black hairs; central lobe in the middle, and the ends of the side lobes, yellow. *Antennæ* thickly clothed with fine, forwardly projecting, black hairs, among which a few are stronger and project at a greater angle; 1st joint brown, on the upperside the base, on the underside the basal ⅔rds black; 2nd joint light-brown, the base and apex darker; 3rd and 4th black. *Eyes* black, with yellow, wavy streaks. *Ocelli* large, black. *Rostrum* pitchy black, the last joint reddish-yellow; *labrum* deep yellow, the margins black.

Thorax.—Pronotum; sides somewhat flattened, the side-margins slightly reflexed; the callosity of the disk reaching ⅔rds of the length, smooth, its central fovea small, the side impressions obsolete; posterior furrow deep; posterior 3rd of disk delicately crenate-punctate. *Scutellum* finely crenate-punctate, the depression large, shallow, posteriorly somewhat curved inwards and well defined. *Elytra; Clavus* with 1 long yellow spot at about ⅔rds of its length; *Corium;* anterior margin deeply, roundly recurved; disk with a row of 4 long yellow spots between the 1st and 2nd nerves, and sometimes 1 or 2 smaller spots beyond the 2nd nerve, 1 of them near the membrane-suture, the other above; *Membrane* yellow-brown, the base more or less, the nerves broadly, and the anterior margin as far as the end of the 1st nerve, black; generally also there is a brown cloud across the middle of the membrane; the margin from the 1st nerve inwards, yellow-brown. *Sternum* black; *coxæ* black, the 1st pair sometimes yellowish towards the apex. *Legs* yellow-brown; *thighs* with very short, yellow hairs; the 1st pair black on the outside; 2nd and 3rd pairs on the inner and outer sides with 2 rows of brown spots, sometimes confluent; *tibiæ* with short brownish hairs, and distant, strong, projecting, black hairs; *tarsi* pilose, beneath with strong hairs; 1st and 3rd joints pitchy black; 2nd joint and the *claws* yellow-brown. Sometimes the legs are yellow, and the markings thereon indistinct.

Abdomen black, beneath delicately crenate, clothed with very short, yellow pubescence; the posterior margin of the last segment yellow.

Length, 2½—3 lines.

Deal and Sheerness, July and August; "10th June, under rejectamenta, on the sands of Wareham Harbour; 11th July, under *Fuci*, sea-shore, Holywood, A. H. Haliday, Esq.; August, salt marshes, Poole Harbour, and Whittlesea Mere" (*Curtis*, B. E., xii, 548).

Species 10.—SALDA RIPARIA.

SALDA RIPARIA, *Fall.* Hem. Suec. 72, 2 (1829); *Sahlb.* Geoc. Fen. 151, 2, var. 2 (1848); *Fieb.* Wien. Ent. Monats. vii, 62 (1863).
ACANTHIA SCOTICA, *Curt.* B. E. xii, 548, 12 (1835).
SALDA HIRSUTULA, *Flor*, Rhyn. Liv. i, 708, 1 (1860).
— LITORALIS, *Fieb.* Wien. Ent. Monats. iii, 238, 15 (1859); Europ. Hem. 147, 15 (1861).

Elliptic, black, clothed with fine, yellow, appressed hairs, mixed with fine, long, projecting, black hairs. *Clavus* with 1 long, subapical yellow spot; *corium* with 6 yellow spots.* *Face*, underside of the 1st joint of the *antennæ*, anterior sides of the *thighs*, and a subapical ring on the *tibiæ*, yellow. *Abdomen* above and beneath with fine, short, whitish hairs.

Head shining; *Crown* with a yellow spot next the eyes in a line with the ocelli; *Clypeus* yellow or black in the middle; *Face* yellow, the central lobe sometimes at the base, or entirely, black. *Antennæ* with fine projecting hairs; 1st joint with a broad, whitish or yellowish streak down the inner side. *Eyes* black, with brown lines. *Ocelli* red or dusky, with a black pupil. *Rostrum* black.

Thorax.—*Pronotum* shining, short-trapeziform; sides straight; posterior margin deeply concave across the scutellum, at the ends somewhat roundly produced over the base of the elytra, the swelling within the hinder angles short, but very convex; disk, the callosity occupying ½ the length, very convex, the central fovea very deep, the side ones scarcely perceptible, the posterior furrow deep but

* Curtis, *l. c.*, says there are 8 spots on the *elytra*, but including that on the *clavus* we see at most only 7.

narrow. *Scutellum* shining, very delicately punctate-crenate, rather convex, the depression very large, its margin posteriorly straighter than the rest of the circumference. *Elytra* dull, smooth; *Clavus* with 1 long, yellow spot towards the apex; claval suture finely punctured; *Corium;* anterior margin, on the first ⅗rds, broadly, roundly reflexed; disk towards the middle with 2 large, distant, yellow spots, and 3 or 4 others in a row within, and along the posterior margin; *Membrane* dusky-yellow, the base at the inner angle with a large black spot; across the middle a brown band, appearing sometimes as spots between the nerves; nerves, and the anterior margin of the membrane, piceous. *Legs* black; *thighs* on the anterior side and the apex yellow; *tibiæ* with projecting black hairs, before the apex a brown-yellow ring, and on the 1st pair also another ring beyond the base; *tarsi* black, 2nd joint yellow-brown.

Abdomen above and beneath with fine, short, whitish hairs.

Length, 2¼—2¾ lines.

"Isle of Bute and Cartland Craigs, August and September" (*Curtis*); Bettws-y-Coed, N. Wales (*Wollaston*).

Species 11.—SALDA CINCTA.

SALDA CINCTA, *H. Schf.* Wanz. vi, 40, t. 194, fig. 598 (1842); *Sahlb.* Geoc. Fen. 153, 7 (1848); *Fieb.* Wien. Ent. Monats. iii, 240, 20 (1859); Europ. Hem. 148, 20 (1861).

— ELEGANTULA, *Flor*, Rhyn. Liv. i, 720, 9, p. (1860).

Long-ovate, black, shining. *Antennæ* black; 1st joint yellow at the apex; 3rd and 4th joints not thicker than the 2nd. *Pronotum* long-trapeziform; *clavus* with a small sub-apical spot; *corium* with fine, scattered, yellow pubescence; anterior margin flattened throughout, yellow, its base, a large spot beyond the middle, and the apex, black; disk with 2 large bluish-gray spots, 4 or 5 small whitish spots, and 1 large, round, clear white, close to the posterior margin; *membrane* ochreous; nerves (except the 1st) black; beyond the middle a row of brown spots; anterior margin yellow, with a large black spot at the end of the 1st nerve, the remainder of the margin fuscous, paler inwardly. *Legs* ochreous.

Head without projecting hairs; constricted behind the eyes into a short neck. *Antennæ* black, very finely haired; 1st joint yellow at the apex; 3rd and 4th joints not thicker than the 2nd. *Eyes* and *Ocelli* black. *Rostrum* piceous; *labrum* black.

Thorax.—Pronotum long-trapezoidal, smooth, constricted in front; anterior margin punctured; sides narrowly flattened in the middle, at the hinder angles incrassated, with a furrow internally, running out on the posterior margin, the side margins narrowly reflexed; hinder angles obtuse; posterior margin slightly concave across the scutellum, at the ends straight; disk, the callosity extending nearly ½ the length, the central fovea large and deep, the posterior furrow very deep. *Scutellum* convex, the central depression large, straight behind. *Elytra* convex; *Clavus* and *Corium* with fine, scattered, yellow pubescence; *Clavus* with a small, narrow, yellow spot near the apex; claval suture punctured; *Corium;* anterior margin flattened throughout, yellow, the base, a long spot beyond the middle, and the apex black, the edge brown; disk with a large, conspicuous, clear-white spot close to the posterior margin, and 4 or 5 very small whitish spots, 2 or 3 are on the basal ½ towards the anterior margin, and 2 posterior near the inner angle (these small spots are sometimes more or less obscure), on the middle of the disk a large, divided, bluish-gray blotch, and another, smaller, at the end of the clavus (these blotches are sometimes very clear, sometimes indistinct); membrane-suture black, with a yellow streak; *Membrane* ochreous; nerves (except the 1st) black; between the nerves a posterior, transverse row of long brown spots; the base more or less clouded with brown; anterior margin yellow, with a large black spot at the end of the 1st nerve, followed by a small yellow spot, the rest of the margin fuscous, lighter along the 5th nerve. *Legs* ochreous; *thighs* paler towards the base, on the inner and outer sides with indistinct brown punctures, the 3rd pair on the inner side with a black line on the apical ½; *tibiæ* narrowly black at base and apex, 1st and 2nd pairs with a faint, central, brown ring; 3rd pair with a few short, projecting, black hairs; *tarsi;* 3rd joint on the apical ½, or entirely, fuscous; *claws* brown.

Length, 1½—1¾ line.

Not very scarce in damp places, in tufts of grass, &c., in winter Lee and Eltham.

Species 12.—SALDA ELEGANTULA.

SALDA ELEGANTULA, *Fall.* Hem. Suec. 75. 7 (1829); *Hahn*, Wanz. ii, 84, t. 55, fig. 168 (1834); *Fieb.* Wien. Ent. Monats. iii, 240, 19 (1859); *Flor*, Rhyn. Liv. i, 720, 9, p. (1860); *Fieb.* Europ. Hem. 148, 19 (1861).
ACANTHIA COCKSII, *Curt.* B. E. 348, 10 (1835).

Long-ovate, black, shining. *Antennæ* black; 1st joint yellow at the apex; 2nd joint yellow except the base; 3rd and 4th joints thickest. *Pronotum* long-trapeziform; *clavus* sometimes with a small apical spot; *corium* with erect black hairs; anterior margin flattened throughout, yellow, the colour spreading from the base on to the disk into a long angular spot, ending beyond the middle of the length; near the posterior margin a rounded, clear-white, conspicuous spot, and 2 gray spots on the disk; *membrane* brownish-yellow, the margin at the anterior basal angle with a large, angulated, yellow spot. *Legs* pale yellowish-brown.

Head constricted behind the eyes into a very short neck; *Clypeus* with a few, long, prominent hairs. *Antennæ* stout, black, very finely haired; 1st joint on the apical 3rd yellow; 2nd yellow, except the base; 3rd and 4th very stout, fusiform. *Eyes* black, with brown streaks. *Ocelli* black. *Rostrum* brown; *labrum* piceous.

Thorax.—Pronotum long-trapezoidal, smooth, very convex, much constricted in front; sides narrowly flattened in the middle, at the hinder angles incrassated, with a furrow internally running out on the posterior margin; hinder angles obtuse; posterior margin slightly, regularly concave throughout; disk, callosity extending $\frac{1}{3}$ the length, the central fovea deep, the posterior furrow very deep, sides anteriorly with a few projecting hairs. *Scutellum* smooth, the central depression straight behind. *Elytra* convex; *Clavus* and *Corium* black, with very short, appressed, yellow pubescence, and long, erect, black hairs; *Corium;* anterior margin much rounded, the edge brown, within the margin horizontal and yellow throughout the length, the colour extending on to the disk, beginning at the base, and extending onwards in the form of a long triangle, of which the inner side is bounded by the 1st nerve; the colour ends

abruptly beyond the middle, subsiding into gray, and is previously crossed by a brown shade; exterior to the 1st nerve, and close to the posterior margin, is a round, conspicuous, white spot; on the disk 2 large, indistinct, gray spots, one in the middle, the other joining the end of the clavus; claval suture narrowly black; *Membrane* brownish-yellow, with darker shades, nerves piceous; at the exterior basal angle a large, angulated, yellow spot, followed, on the margin, at the end of the 1st nerve, by a blackish spot; the rest of the margin brown, but inwardly often a clearer long streak. *Legs* pale yellowish-brown; *tibiæ* at the apex narrowly black; *tarsi;* last joint piceous.

Abdomen beneath, with fine yellow pubescence.

Length, 1½—1¾ line.

Scarce. Reigate Heath, and near Hammersmith Bridge, in March (*Dr. Power*).

Two specimens taken by Dr. Power have the 2nd joint of the antennæ black, as in *S. cincta*, and in one of the specimens the last joint is light brown, in all other respects they agree with *S. elegantula*. Flor, indeed, gives *S. elegantula* as a form of *S. cincta* with undeveloped wings, but this is not the case in our specimens; and although the two species are much alike, yet, besides the normal differences in the colouring of the antennæ and elytra, there are the erect black hairs on the corium of *S. elegantula*, which are entirely wanting in *S. cincta;* we cannot, therefore, accept their identity as proved.

Section 12.—*REDUVINA.**

Family 1.—REDUVIDÆ.

Genus 1.—Ploiaria, *Scop.*

Very long, narrow, and delicate.

Head ob-ovate, very convex, divided into 2 distinct parts by the transverse incision, which is in a line with the eyes; the posterior portion hemispherical; the anterior portion, or clypeus, still more convex, but narrow, and with parallel sides; *Face* narrow, vertical,

* Page 38.

Antennæ longer than the body, very fine, filiform, 4-jointed; 1st and 2nd joints very long, elbowed at their junction; 3rd slightly shorter than the 1st; the 1st at the base and apex, and the 4th throughout, slightly thicker. *Eyes* small, hemispherical, with distinct facets. *Ocelli* 0. *Rostrum* very short, curved; 1st joint thick, ½ the length of the head, 2nd shorter, 3rd obconic.

Thorax.—Pronotum long-trapeziform, constricted before the middle, incrassated at the anterior angles, and as far back as the constriction; the central longitudinal furrow deep; sides deflected, hinder angles prominent, incrassated. *Scutellum* short, triangular, depressed, ending with a short, erect spine, the base with a rounded nodule, ending in an upturned spine. *Elytra* very long, narrowest just beyond the base, then gradually widened; nerves strong; *Clavus* very narrow; *Corium* very narrow, prolonged on the anterior margin as an incrassated lobe, which is widest and rounded at the extremity; *Membrane* reaching inside the corium as far as the clavus, posteriorly very wide, apex rounded; the base with a large, irregular, nearly 6-sided cell, which occupies nearly the whole breadth; from its pointed apex a long nerve extends to the posterior margin. *Sternum; Prosternum* narrow, subdepressed, the 1st pair of coxæ inserted on its anterior angles; *Meso-* and *Metasternum* convex, with a slight channel down the centre. *Legs;* 1st pair short, stout; *coxæ* very long cylindrical; *thighs* long-fusiform, with 2 rows of very small, sharp teeth beneath, *tibiæ* shorter than the thighs; 2nd and 3rd pairs of legs very long, slender, filiform (the 3rd pair longer than the 2nd), *thighs* slightly thickened at base and apex, *tibiæ* longer than the thighs; *tarsi* short, 1st joint very small, 2nd and 3rd of equal length.

Abdomen narrow at the base, gradually widened; above flat, beneath convex; *Connexivum* broad, reflexed. *Genital segments;* in the ♂ beneath, the 1st forms a large trapezoidal plate, the narrowest side behind; at its sides and posterior margin the 2nd is barely visible; the 3rd small and rounded, with horny forceps at the sides; in the ♀ the segments are very short, 1, cleft in the middle, lies over the other 2, which are only visible at the sides.

Species 1.—Ploiaria erratica.

? Cimex culiciformis, *De G.* Mém. iii, 323, 4, t. 17, figs. 1—8 (1773).
Gerris erraticus, *Fall.* Mon. Cim. 117, 6 (1807); Hem. Suec. 164, 2 (1829); *Burm.* Handb. ii, 224, 2 (1835); *H. Schf.* Wanz. ix, 118 (1850).
Ploearia erratica, *Fieb.* Europ. Hem. 149, 2 (1861).

Antennæ and *legs* without hairs.

Head yellowish-fuscous, with very short, whitish, appressed hairs; the hinder ½ darker, with a black line on the side. *Antennæ* naked, black-brown; 1st joint with several white rings. *Eyes* black. *Rostrum* yellowish, 1st joint, middle of the 2nd, and base of the 3rd, blackish.

Thorax.—Pronotum yellowish-fuscous, the sides with a darker line growing paler posteriorly, the incrassated sides of the anterior part very stout; side and posterior margins and the hinder angles whitish; posterior margin straight. *Scutellum* brown, apical spine yellow; basal nodule fuscous, the end of its spine whitish. *Elytra* fuscous, nerves white; the prolongation of the *Corium* on the anterior margin yellowish, with a long black spot at the end; *Membrane* tesselated black and white. *Sternum* piceous. *Legs* dark brown, with broad white rings, except towards the end of the *tibiæ*.

Abdomen above, dark piceous; *Connexivum* yellowish, on the anterior ½ of each segment paler, on the posterior ½ blackish: underside deep piceous, the middle and sides yellowish; stigmata prominent, white.

Length, 2 lines.

In thatch in autumn, not scarce. The larva, according to Burmeister, covers itself with dust.

Species 2.—Ploiaria vagabunda.

Cimex vagabundus, *Lin.* F. S. 972 (1761); S. N. 732, 119 (1767).
? — culiciformis, *De G.* Mém. iii, 323, 41, t. 17, figs. 1—8 (1773).
Ploiaria vagabunda, *Scop.* Del. Flor. et Faun. Insubr. t. 25, fig. 5 (1785-8).

GERRIS VAGABUNDUS, *Fab.* E. S. iv, 192, 19 (1794); S. R. 262, 9 (1803); *Wolff*, Ic. Cim. 203, 197, t. 20, fig. 197 (1804); *Full.* Mon. Cim. 117, 5 (1807); Hem. Suec. 163, 1 (1829); *Burm.* Handb. ii, 224, 1 (1835); *H. Schf.* Wanz. ix, 117, t. 305, fig. 941 (1850); *Flor*, Rhyn. Liv. i, 689, 1 (1860).

PLŒARIA VAGABUNDA, *Am. et Serv.* Hém. 397, 1 (1843).

PLOEARIA ERRATICA, *Sahlb.* Geoc. Fen. 149, 1 (1848); *Fieb.* Europ. Hem. 150, 4 (1861).

Antennæ and *legs* with fine long hairs.

Head pale yellowish, with whitish hairs, base and sides black, the posterior portion divided longitudinally into 2 lobes; the anterior portion similarly divided, with a small point between the lobes in front. *Antennæ* dark brown, 1st and 2nd joints with wide white rings and very fine, projecting, black hairs, which are long on the 1st, gradually shorter on the 2nd. *Eyes* black. *Rostrum* yellowish; a black spot on the sides at the base; apex piceous.

Thorax.—Pronotum pale yellowish, the raised sides of the central longitudinal furrow, diverging to the hinder angles, whitish; the incrassation on the anterior portion blackish, not very prominent, but with a cavity on the inner side, the margin of which is whitish; side margins sinuate, just before the hinder angles very prominent, the angles themselves being retracted; posterior margin slightly concave. *Scutellum* yellowish, apical spine white; basal nodule fuscous, black posteriorly, spine whitish. *Elytra* fuscous, tesselated with white; nerves whitish; anterior margin white, with 2 conspicuous, distant, black spots. *Sternum; Prosternum* whitish, the middle yellowish, with a black line on each side; *Meso-* and *Metasternum* black, the middle dull yellowish. *Legs* whitish, with narrow, fuscous-black rings; *thighs* and basal ½ of the *tibiæ* with long, fine, projecting, black hairs; *tibiæ* towards the end, and the *claws*, fuscous-brown.

Abdomen brown, beneath yellowish-brown, black at the base and apex; stigmata yellow; *Connexivum* yellow.

Length, 2¾—3 lines.

Taken occasionally by beating hedges, &c.; abundant at Lee, in ivy, in September.

Genus 2.—Pygolampis, *Germ.*

Long, narrow, elliptic.

Head horizontal, very long, behind the eyes cylindrical, the transverse incision slight, with a fovea in its middle; the posterior margin in the middle, with a deep, rounded incision, and on each side several short, blunt spines; anterior portion convex, narrower than behind the eyes, widened a little in front by the very short antenniferous processes, central lobe projecting in front as a short obtuse point. *Antennæ* short, elbowed at the end of the 1st joint; 1st joint stout, fusiform, as long as the head, beneath flat, on the margins a row of short spinous hairs; 2nd, 3rd, and 4th thin, filiform, 2nd curved, 3rd about ½ the length of the 4th. *Eyes* small, not prominent. *Ocelli*, small, approximate. *Head* beneath flat, the side margins of the hinder portion with 2 short, 3-branched appendages, each branch ending with a hair; anterior portion with the side margins raised, and with a few, short, spinose hairs. *Rostrum* reaching to the front of the prosternum; 1st joint more than ½ the length of the head, thickened to the end.

Thorax.—Pronotum long-trapeziform, narrow, flat, constricted before the middle; the hinder half transversely concave, sides towards the hinder angles incrassated, prominent; hinder angles rounded; the central longitudinal furrow of the disk nearly obsolete in front, on the hinder portion gradually widened to the posterior margin, and with a slighter furrow on each side of it; posterior margin thick, slightly concave across the scutellum, then straight but slightly oblique to the hinder angles. *Scutellum* small, apex prominent. *Elytra;* anterior margin straight; *Corium* narrow, prolonged on the anterior margin to a long point; *Membrane* on the inner margin of the corium with 1 large, irregularly 5-sided cell, beyond it 2 long, parallel cells, with 1 nerve from the end of the 1st. *Sternum; Prosternum* in front, with a long, strong, horizontal spine projecting forwards from the base of each coxa, between the spines a deep angular furrow; *Mesosternum* flat, the anterior margin roundly projecting; *Metasternum* sub-trapeziform, anterior margin roundly cut out on each side, projecting in the middle in a short point; sides and posterior margin straight. *Legs; coxæ* strong; *thighs;* 1st pair thickest, fusiform, angulated beneath, beset with several small points and hairs; 2nd pair slightly longer than, but

not so thick as, the 1st, cylindrical, slightly thickened to the apex; 3rd pair long, cylindrical; *tibiæ;* 1st and 2nd pairs stout, short; the 1st with a deep, exterior, subapical channel; 3rd pair long, cylindrical; *tarsi* short, stout.

Abdomen long, the segments long, the posterior margin of the 1st 4, on the underside, cut out in a semi-oval, on the 5th angularly, on the 6th straight, with the angles obtuse, prominent. *Genital segments;* in the ♂ above, 1 visible, flat, long-cordate, constricted before the apex, projecting beyond the abdominal segments; on the underside 2 are visible, convex, the 1st triangular, cleft in the centre, the points of the cleft parted; the 2nd short convex, obtuse, lies parallel to, but within the end of the segment on the upper side. In the ♀, according to Fieber, the abdomen ends with 2 obtuse plates.

Species 1.—Pygolampis bifurcata.

Cimex bifurcatus, *Gmel. Lin.* S. N. 4, 2181, 457 (1788).
Acanthia denticulata, *Rossi,* F. E. 1284 (1790).
Gerris pallipes, *Fab.* E. S. iv, 189, 6 (1794); S. R. 262, 6 (1803).
Pygolampis bifurcata, *Germ.* F. Ins. Eur. 8, 22; Reis. Dalm. 268, 493 (1817).
Emesa denticollis, *Fall.* Hem. Suec. 161, 23, 1 (1829).
Ochetopus spinicollis, *Hahn,* Wanz. i, 177, t. 28, fig. 92 (1831).
Pygolampis bifurcata, *Fieb.* Europ. Hem. 151 (1861).

Dull brown, with fine, appressed hairs; *abdomen* reddish-yellow; *connexivum* with a yellow spot at the junction of the segments; *corium* and *membrane* nearly unicolorous.

Head black-brown, the anterior portion with 2 red-brown lines divergent from the base to the antenniferous processes. *Antennæ;* 1st joint brown, the remainder black, all with very short projecting hairs. *Eyes* black. *Ocelli* black, shining. *Rostrum* black-brown. *Head* beneath brown, the margins black.

Thorax.—Pronotum black-brown in front. *Scutellum* blackish. *Elytra* dull brown; *Corium* at the base, and the *membrane,* reddish or yellowish-brown. *Sternum* black, with several short, erect, blunt spines, the 2 anterior spines of the *prosternum* yellowish at the apex.

Abdomen reddish-yellow; *Connexivum* brown, speckled with yellow; at the junction of the segments a yellow spot: underside

with 2 rows of black spots connected by a line, and 2 other, indistinct, black lines; stigmata black, on a large yellow base.

Length, 7 lines, ♂.

A single example is in the collection of Thomas Marshall, Esq., of Leicester, and he writes to us concerning it:—"I found it some 30 years ago, beneath a piece of sandstone, at Quatford, near Bridgnorth, in Shropshire, in the middle of September."

Genus 3.—CORANUS, *Curt.*

Long, sub-elliptic.

Head subovate, elevated in front, deflected to the pronotum, behind the eyes elongate, convex, obconic, broadest across the eyes, short before the transverse incision; *Face* triangular, deflected in a curve; central lobe prominent; side lobes scarcely visible; cheek-plates broad, compressed. *Antennæ* inserted on the top of the head, close to the eyes, 8-jointed, elbowed at the junction with the 2nd joint; 1st joint very short obconic; 2nd, 4th, 6th, and 8th long, stout, cylindrical, of about equal thickness, 2nd and 8th of nearly equal length, 4th and 6th $\frac{1}{2}$ the length of the 2nd; 3rd, 5th, and 7th very short. *Eyes* moderate, globose, very prominent. *Ocelli* small, distant, inserted just behind the transverse incision. *Rostrum* rather longer than the head, very stout, cylindrical, curved, the apex resting on the prosternum; 2nd joint longest; *labrum* ovate-conic, articulated at the middle, and terminating in a trigonate lobe.

Thorax.—Pronotum subtrapezoidal, almost hexagonal, the constriction on the sides before the middle deep; side margins incrassated; the transverse furrow deep, the disk before it convex, with 4 short, longitudinal channels ending in the transverse furrow; anterior angles much rounded; the posterior portion flatter; hinder angles incrassated, prominent, rounded, with a channel on the inner side; the short hinder sides converging to the scutellum, across which the posterior margin is somewhat squarely concave. *Scutellum* appears as a prominent, hindwardly projecting, obtuse cone. *Elytra* (in British examples) not $\frac{1}{2}$ the length of the abdomen;* *Membrane* abbreviated, but the 2 basal cells, though

* We know but of one exception, a ♂, taken by Mr. Dale at Christchurch, Hants, in October, 1830, which has the *membrane* of the elytra and the *wings* fully developed. Fallén mentions such examples, ♂, having been found in Sweden by Gyllenhal and Zetterstedt.

short, are clearly developed; from the base of the inner cell a nerve curves to the posterior margin. *Sternum; Prosternum* with 3 parallel, longitudinal furrows; *Mesosternum* with a deep, oblique channel to the anterior angles, the middle anteriorly with a short keel; *Metasternum* pyriform, convex in front, and prolonged into a keel. *Legs* strong, short; *thighs* uneven; *tarsi* long, slender, 3rd pair longest; 1st joint very short, 2nd ½ the length of the 3rd; *claws* very long, curved.

Abdomen much broader than the pronotum, long oval, broadly rounded behind, very concave above, convex beneath; *Connexivum* moderate, vertical. In the ♂ above, the posterior margin of all the abdominal segments (except the last) is straight, in the 6th it is broadly rounded and almost reflexed; on the underside, the posterior margin of the 5th is angularly cut out, the 6th is short in the middle, longer at the sides, and its posterior margin closely surrounds the single, large, oval, convex, genital segment, which projects far beyond it. In the ♀ above, the posterior margin of all the abdominal segments (except the last) is straight, in the 6th it is widely concave; on the underside the posterior margin of the 5th very deeply concave; the 6th is very long, its posterior margin somewhat squarely cut out. *Genital segments;* in the ♂ as stated above; in the ♀ above, 2 are visible, the 1st anteriorly filling the concave posterior margin of the last abdominal segment, posteriorly it is broadly rounded, the margin foliaceous and projecting; the 2nd segment triangular, deflected vertically, is scarcely seen from above; on the underside 2 segments are visible, the 1st in the form of 2 broad angulated plates united at their apices, leaving, in the middle, a small triangle, which is filled by the 2nd of the segments.

Species 1.—Coranus subapterus.

Cimex subapterus, *De G.* Mém. iii, 287, 27, t. 15, figs. 10, 11 (1773).
Reduvius apterus, *Fab.* S. R. 281, 72 (1803).
— pedestris, *Wolff*, Ic. Cim. 205, 199, t. 20, fig. 199 (1811).
— subapterus, *Fall.* Hem. Suec. 157, 3 (1829).
Coranus — *Curt*, B. E. x. p. & pl. 453 (1833).
Colliocoris griseus, *Hahn*, Wanz. ii, 25, t. 41, fig. 129 (1834).
Harpactor pedestris, *Burm.* Handb. ii, 230, 3 (1835).
— Hahni, *Kolen*, Mel. Ent. vi, 47, 250 (1857).
— subapterus, *Flor*, Rhyn. Liv. i, 684, 2 (1860).
Colliocoris pedestris, *Fieb.* Europ. Hem. 155, 4 (1861.)

Dull, black, densely clothed with short, yellowish-gray, appressed hairs; *abdomen* beneath, yellowish-brown; some of the hairs fine, long, projecting, brownish.

Head; in the centre and round the eyes a whitish line. *Antennæ* light brown, with scarcely perceptible, short, whitish hairs; 1st, 2nd, and 4th joints at the apex, 6th, 7th, and 8th entirely, darker, 2nd and 4th with a few projecting, long, brown hairs. *Eyes* black, smooth, shining. *Ocelli* red. *Rostrum;* 1st joint brown, 2nd and 3rd black.

Thorax.—Pronotum with distant, erect, long, brown hairs; the furrows on the anterior portion black, shining; sides with a dark line extending to the hinder angles. *Scutellum;* sides black, apex yellowish. *Elytra* reaching only to the middle of the 3rd abdominal segment, lying on the abdomen, but not nearly so wide; anterior margin slightly sinuate; *Membrane* contorted, very shining, yellowish-fuscous, reaching but little beyond the apex of the corium; nerves black. *Sternum* black; *Metasternum* yellowish. *Legs* with short, whitish hairs, and long, projecting, black hairs; *thighs* yellow-brown, with blackish rings, and black on the inner side, in a long, stripe; *tibiæ* brown, blackish on the 1st 3rd, base and a ring near it yellowish; *tarsi* yellow-brown, end of the 3rd joint and the *claws*, black.

Abdomen above (by reason of the stout hairs) yellowish-gray, at the sides of each segment a black spot, surrounded by a yellowish ring; *Connexivum;* anterior ½ of each segment black, posterior ½ yellow: underside yellowish-brown, more or less mottled with black spots; the hairs long, yellowish.

Length, 4—5 lines.

Taken in dry sandy places in July, August, and September, under the shelter of heather, furze, and other bushes; Weybridge, Addington Hills, Deal, &c. The insects, if handled, give out a delicate odour like that of ripe pears.

Genus 4.—REDUVIUS, *Fab.*

Elliptic.

Head elongate, very broad across the eyes, deflected thence to the base, behind the eyes nearly cylindrical, being but little narrowed to

the pronotum; a deep transverse incision close to the eyes; between the eyes horizontal, narrow, with a quadrangular depression; in front produced in the middle over the base of the face, between the antennæ, in a quadrangular, shortly-furcate process; *Face* long, subquadrangular, deflected in a curve; central lobe long, narrow, prominent; side lobes almost obsolete; cheek plates very long and wide, lapping over the sides of the central lobe. *Antennæ* inserted on the top of the head, close to the anterior orbit of the eyes (on very short processes), long, setaceous, 4-jointed; 1st joint stoutest, slightly thickened to the apex, not quite so long as the head; 2nd filiform, nearly twice as long as the 1st; 3rd and 4th very slender, 3rd longer than the 2nd, 4th not so long as the 2nd. *Eyes* large, prominent, viewed from the side subreniform, the facets small, distinct. *Ocelli* large, prominent, approximate, inserted close to the eyes behind the transverse incision. *Rostrum* reaching to the middle of the prosternum, very thick, curved; 1st joint ½ the length of the 2nd; 3rd very short and acute; *labrum* long, triangular.

Thorax.—Pronotum trapezoidal, constricted before the middle; anterior portion narrower than the posterior, gibbous, on the surface a slight, longitudinal depression; posterior portion flatter, with 3 longitudinal, shallow furrows extending to the posterior margin, the middle one wide; posterior margin convex, hinder angles rounded. *Scutellum* large, triangular; disk at the base with a large depressed triangle, parallel with the margins; apex with a long spine projecting upwards. *Elytra* as long as the abdomen, flat; at the base on the anterior margin a flat, acute, appressed spine; *Clavus* narrow, deflected to the corium; *Corium* internally diaphanous, somewhat depressed next the clavus; anterior margin sinuate, overlying the abdomen at its base, but afterwards lying within the connexivum; *Membrane* very broad; close to the inner margin a slender nerve; on the disk 2 long cells, of which the outer one is largest, its outer marginal nerve and its continuation beyond the cells, strong. *Wings* broad, diaphanous. *Sternum; Prosternum* with a deep longitudinal rhomboidal furrow, making a long triangular prolongation between the coxæ; *Mesosternum* with a short xyphus; *Metasternum* convex, with a central keel. *Legs* strong, 3rd pair longest; *coxæ* thick; *thighs* thick, 1st and 2nd pairs thickest, subfusiform; 3rd pair long, cylindrical, slightly bent; *tibiæ* stout, bent at the base, 1st and 2nd pairs widened to the apex, and on the underside expanded into a long, deep channel, incrassated at the sides, the posterior ends pro-

jecting round the base of the tarsi; 3rd pair long, cylindrical, slightly thickened at the apex; *tarsi* long, 3rd joint longest, the 1st joint on the 1st and 2nd pairs very short, on 3rd pair nearly as long as the 2nd; *claws* long, stout, curved.

Abdomen long, elliptic, above flat or concave, *Connexivum* broad, vertical: beneath convex, flattened at the sides, the 1st and 2nd segments with a slight central keel; the posterior margin of all the segments (except the last) concave; the 6th, in the ♂, posteriorly with an oval aperture, through which the only visible genital segment protrudes; in the ♀, the 6th segment above has the posterior margin slightly concave, beneath, it is constricted before its posterior margin, which is slightly convex. *Genital segments;* in the ♀, above, 3 are visible, the 1st short and flat, makes with its rounded posterior margin the contour of the abdominal segments, the 2nd longer with convergent sides; the 3rd short and obtuse; beneath, the 1st segment is cleft in the middle, the sides of the cleft widely divergent; the 2nd rhomboidal, deeply incised longitudinally, lies in the cleft and projects beyond it; the 3rd projects beyond the 2nd in a somewhat obtuse point, the sides incrassated and raised in a triangle round the apex of the 2nd.

Species 1.—REDUVIUS PERSONATUS.

CIMEX PERSONATUS, *Lin.* F. S. 942 (1761); S. N. 493, 64, t. 11, fig. 13 (1767).
—. — *Scop.* Ent. Carn. 130, 379 (1763).
CIMEX QUISQUILIUS, *De G.* Mém. iii, 281, 25, t. 15, figs. 1—9 (1773).
REDUVIUS PERSONATUS, *Wolff*, Ic. Cim. 79, 76, t. 8, fig. 76 (1801); *Fab.* S. R. 276, 7 (1803); *Fall.* Hem. Suec. 156, 1 (1829); *Curt.* B. E. x, 453 (1833); *Hahn*, Wanz. ii, 17, t. 39, fig. 125 (1834); *Burm.* Handb. ii, 235, 1 (1835); *Am. et Serv.* Hém. 337, 1 (1843); *Flor*, Rhyn. Liv. i, 679, 1 (1860); *Fieb.* Europ. Hem. 155, 1 (1861).

Fuscous or piceous-brown; *head*, anterior part of the *pronotum*, *scutellum*, and *thighs*, blackish or black; *tibiæ* yellow at base and apex. *Legs* with fine prominent hairs. *Membrane-suture* with a whitish line.

Head black, with fine projecting hairs. *Face;* central lobe

ochreous. *Antennæ;* the basal processes ochreous at the apex; 1st joint black, the rest fuscous; all with fine projecting hairs, denser on the 1st and 2nd. *Eyes* black. *Ocelli* black, surrounded by a light ring. *Rostrum* hairy, piceous, the ends of the joints paler; *labrum* ochreous.

Thorax.—*Pronotum* with long, erect, distant hairs, closer at the sides; anterior portion black, smooth; posterior portion finely, transversely, crenate. *Scutellum* with long, erect, black hairs. *Elytra; Corium* fuscous or piceous-brown, paler internally; membrane-suture with a whitish line; *Membrane* rather paler than the corium. *Sternum* black, with strong hairs, the sides transversely crenate. *Legs; coxæ* black; *fulcra* piceous, ochreous at the base; *thighs* black or pitchy black, finely haired; 1st and 2nd pairs with dense, long, yellowish, projecting hairs beneath; *tibiæ* with long brown projecting hairs, piceous, apical ½ gradually paler or ochreous; apex piceous, the bent base ochreous; *tarsi* ochreous, with fine yellowish hairs; end of the joints, and the *claws*, brown.

Abdomen above slightly shining, ochreous in the middle; beneath black, shining, finely haired.

Length, 7—8 lines.

Found occasionally in houses and fowl-houses; it also flies at night to lights in windows. The larva feeds on *Acanthia lectularia* and other insects, and covers itself with dust and *débris*.

Family 2.—NABIDÆ.

Genus 1.—Metastemma, *Am. et Serv.*

Long-oval, stout, with long, projecting, distant hairs.

Head rather long, convex, deflected in a curve, produced close behind the eyes into a short, annular neck; *Face;* central lobe broad, not very prominent; cheek plates broad, thickened and projecting at the end; antenniferous processes close to the eyes, arising at the lower part of the sides of the head and pointing downwards. *Antennæ* hairy, 5-jointed; 1st joint a little thicker than the others, and ½ the length of the 3rd; 2nd very short, obconic; 3rd and 4th in length and thickness subequal, 3rd a little stouter towards the apex;

5th a trifle shorter than the 4th; 4th and 5th petiolate. *Eyes* large, oval, prominent. *Ocelli* small, distant, inserted close to the base of the head. *Rostrum* stout, hairy, curved, reaching to the 1st pair of coxæ; 1st joint very thick, as wide at the base as the end of the face; 2nd and 3rd in length subequal, 2nd gradually widened, 3rd gradually narrowed to the end; 4th short, aculeate.

Thorax.—Pronotum long-trapezoidal, constricted beyond the middle; anterior margin short, straight, incrassated in the middle; anterior angles much rounded; side margins curved under, the post-medial incision slight; posterior margin straight, the angles obtuse. *Scutellum* rather small, somewhat depressed at the base. *Elytra* (in our species) not reaching beyond the 1st abdominal segment; *Clavus* wanting; *Corium* shorter on the inner than on the outer margin; posterior margin straight; *Membrane* rudimentary, appearing merely as a border to the corium. *Sternum*; *Prosternum* produced round the coxæ, and into a short point between them, the middle with a deep narrow channel; *Meso-* and *Metasternum* depressed in front, raised posteriorly, and with a short, slight keel. *Legs* strong; *thighs*; 1st and 2nd pairs stoutest (the 1st the stouter of the two), fusiform, 1st pair beneath, on the 2nd ½, flattened, with 2 rows of strong, spinose teeth; 3rd pair subclavate, compressed; *tibiæ* thickened to the apex; 1st pair stoutest, flattened, and angularly widened to the apex; on the inner side curved and set with spinose teeth, the end itself obliquely truncate, and furnished with an expanded, spongiose cushion; 2nd pair at the end with a similar but smaller cushion; *tarsi* slender, stouter, and longer in the 3rd pair; 1st joint very short; 2nd and 3rd in length subequal; *claws* very long and curved.

Abdomen long-oval, convex above, very convex beneath; *Connexivum* broad, much reflexed.

Species 1.—METASTEMMA GUTTULA.

REDUVIUS GUTTULA, *Fab.* E. S. iv, 208, 54 (1794); S. R. 281, 70 (1803).
NABIS — *Lat.* Gen. iii, 128 (1807); *Hahn*, Wanz. ii, 28, t. 41, fig. 130 (1834).
PROSTEMMA — *Lap.* Hém. 1z, 13 (1833); *Curt.* B. E. xv, pl. 684 (1838); *Burm.* Handb. ii, 241, 1 (1835); *Stein*, Berl. Ent. Zeits. i, 86, 1 (1857).

POSTEMMA BRACHELYTRUM, *L. Duf.* Ann. Soc. Ent. France, iii, 350, pl. 5, fig. 8 (1834).

METASTEMMA GUTTULA, *Am. et Serv.* Hém. 329, 1 (1843); *Fieb.* Europ. Hem. 158, 2 (1861).

Bright shining blue-black, with distant, long, black hairs; *elytra* and *legs* vermilion.

Head lustrous, smooth. *Antennæ;* 1st, 2nd, and 3rd joints yellow-brown, 1st and 3rd black at base and apex, 2nd with a narrow white ring round the apex; 4th and 5th pitchy black; all except the 2nd and 5th with long, projecting hairs, the 1st also is only hairy at the apex. *Eyes* and *Ocelli* piceous. *Rostrum;* the junction of the joints, and the last joint entirely, yellowish.

Thorax.—Pronotum lustrous, smooth; the disk with few, the sides with several, long, strong, projecting black hairs; *Scutellum* deep dull black, sides with short, erect hairs. *Elytra; Corium* dull vermilion, with short, erect hairs; *Membrane;* the rudiment dingy ochreous. *Sternum* deeply and coarsely wrinkled. *Legs* with long, projecting black hairs; *coxæ* black, the remainder (except as stated) vermilion; *thighs;* the denticulation beneath the 1st pair black; *tibiæ;* apex black; 1st pair shining, orange-yellow, the denticulation beneath, black; *tarsi;* yellow-brown to piceous.

Abdomen above slightly shining, deeply, coarsely punctured; beneath black; the hairs above and beneath long and projecting.

Length, 4—4½ lines.

A single specimen in the collection of the late Mr. John Curtis, of which Mr. Curtis says, in his 'British Entomology'—"This beautiful insect was discovered last September (1837) on the sand-hills near Sandwich, by my friend Mr. A. Kennedy, who very kindly presented me with his only specimen." Mr. G. R. Crotch also has an example, taken at Charlton, by Mr. E. W. Janson.

Genus 2.—NABIS, *Lat.*

Elongate, narrow in front, widened and rounded behind.

Head long, short behind the eyes; *Crown* slightly convex, nearly horizontal, not much produced before the eyes, and narrower than behind them; *Face* long, curved, deflected; central lobe prominent; anterior margin straight; side lobes very short; cheek-plates long,

compressed on to the central lobe. *Antennæ* long, thin, filiform; each inserted on a flat process at the sides of the head, in a line with the middle of the eyes; 1st joint slightly stouter than the others, thickened a little to the apex, long, more than ½ of it reaching beyond the end of the face; 2nd 1½ time as long as the 1st; 3rd and 4th each somewhat shorter than the 2nd. *Eyes* moderate, prominent. *Ocelli* in a line with the base of the eyes, or a little posterior. *Rostrum* thin, curved, reaching to the 2nd pair of coxæ; 1st joint very stout, nearly as wide as the face, ¼ as long as the 2nd; 2nd and 3rd long, subequal; 4th ⅓rd the length of the 3rd.

Thorax.—Pronotum long-trapeziform, narrow to behind the middle, there deeply constricted on the sides, and on the disk broadly depressed, thence posteriorly suddenly widened to the hinder angles, anteriorly somewhat flat-annular, then convex to the depression, posteriorly very convex, but deflected to the posterior margin which is slightly convex or straight; hinder angles rounded, incrassated within, with a depression on the inner side of the thickening. *Scutellum* moderate, triangular; base with a deep depression, apex acute. *Elytra* when fully developed as long or longer than the abdomen, at the base wider than the abdomen, but posteriorly not so wide, and lying within the connexiva, roof-shaped; *Clavus* long, wide at the end of the scutellum, the inner margin tapering to the base and apex; *Corium;* anterior margin long, very slightly rounded; inner margin much shorter; posterior margin oblique, straight, clearly defined; the 2nd nerve furcate at the end; *Membrane* often but partially developed, when developed broad, rounded posteriorly; from the middle of the base 3 long subparallel closed cells, not reaching to either of the margins, surrounded by a series of narrow cells diverging to the margins; nerves strong. *Sternum; Prosternum* annular in front, much produced round the base of the coxæ, in the middle ending in a triangle between them; *Mesosternum* convex, with a slight middle channel; *Metasternum* convex, with a slight middle keel. *Legs; coxæ* very stout; *thighs;* 1st and 2nd pairs stout, fusiform, 1st pair stoutest; 3rd pair longer, slightly thickened towards the apex; *tibiæ;* 1st and 2nd pairs stout, widened to the apex, with a small spongy pad on the broad end, bent at the base, beneath flattened, with 2 rows of close, short teeth; 3rd pair longest, cylindrical; *tarsi* long, 1st joint very small, 2nd shorter than the 3rd; *claws* long, curved.

Abdomen long-oval, slightly convex above, very convex beneath;

the 6th segment, in both sexes, with its posterior margin concave and the angles prominent; *Connexivum* very broad and greatly reflexed.

Species 1.—NABIS BREVIPENNIS.

NABIS BREVIPENNIS, *Hahn*, Wanz. iii, 32, t. 83, fig. 253 (1835); *Flor*, Rhyn. Liv. i, 694, 1 (1860); *Fieb.* Europ. Hem. 159, 1 (1861).

Black; clothed with fine silky pale yellowish hairs; *pronotum* anteriorly and posteriorly, and the *elytra*, dull, yellow-brown; *elytra* very short.

Head yellow-brown, sometimes with dark shades, beneath black. *Antennæ* yellow-brown; 1st joint as long as the head, black at base and apex; 2nd black just below the apex; 3rd and 4th brown. *Eyes* and *Ocelli* black. *Rostrum* yellow-brown.

Thorax.—Pronotum yellow-brown, anteriorly and posteriorly generally clear, in the middle shaded with brown, and with a short, slight, longitudinal keel; sides black, in the middle slightly curved out; posterior margin straight. *Scutellum* deep black, sometimes yellow on the sides. *Elytra* narrow, ½ the length of the abdomen; *Clavus* and *Corium* yellow-brown; *Membrane* paler, sometimes mottled with brown, very short, and with only 2 short cells. *Sternum* black, the odoriferous orifice large, prominent, yellow. *Legs* with very fine, subappressed, yellowish hairs; *thighs* brown, mottled with yellow; *tibiæ* yellow, base and apex broadly black or black-brown; 1st and 2nd pairs, in the middle, with a broad, brown ring, sometimes also, but fainter, on the 3rd pair; the last on the inner side have 2 rows of stout, brownish hairs; *tarsi* yellow, base and apex of the 2nd joint, apex of the 3rd, and the *claws*, black-brown.

Abdomen in the ♂ with the sides more parallel than in the ♀; above black, shining; *Connexivum;* at the base of each segment a triangular orange spot. Underside shining, brown shaded with black; stigmata orange.

Length, 4½ lines.

Scarce: taken by Mr. G. R. Crotch; locality not stated.

Species 2.—Nabis apterus.

Reduvius apterus, *Fab.* E. S. Sup. 546, 54 (1798); S. R. 281, 72 (1803); *Wolff*, Ic. Cim. 201, 20, t. 20, fig. 200 (1811).
Aptus — *Hahn*, Wanz. i, 35 (1831).
— subapterus, *Hahn*, Wanz. i, t. 6, fig. 24 (1831).
Nabis — *Fieb.* Europ. Hem. 160, 2 (1861).

Black; *head, pronotum* and *elytra* dull, yellow-brown, the 2 latter mottled with fuscous, sides of the pronotum black. *Legs* ochreous or yellow-brown; *thighs* and *tibiæ* with 2 or 3 black or brown rings. *Elytra;* the *corium* generally short, and the *membrane* only ½ developed. *Abdomen* shining.

Head smooth. *Antennæ* yellow-brown, 1st joint ½ as long as the head, base and apex piceous; 3rd just before the apex black, apex yellowish; 4th and 5th piceous; 3rd and base of the 4th with short, projecting hairs. *Eyes* black. *Ocelli* red. *Rostrum* yellow-brown; 1st joint, except the apex, and the base of the 2nd, black; 3rd and 4th sometimes piceous.

Thorax.—Pronotum smooth, with a few, scarcely perceptible hairs; yellow-brown mottled with fuscous-brown, most on the posterior portion; sides black; posterior margin straight. (In examples where the elytra are not fully developed the pronotum is not so wide or convex posteriorly as in those where the elytra are fully developed.) *Elytra* yellow-brown, brighter on the corium than on the membrane, mottled or obscured with fuscous; *Corium;* apex fuscous-black; *Membrane* at the exterior basal angle whitish, with a black spot adjoining. *Sternum;* the raised part round the coxæ yellowish-white. *Legs,* including the *coxæ,* ochreous, with very fine, short, yellowish hairs, the underside with stronger, black hairs; *thighs* on the sides with 1 or 2 rows of blackish spots, on the inner side punctured, and 2 undefined blackish rings on the apical ½; *tibiæ;* 1st and 2nd pairs with 3 black-brown rings, the middle one broadest and palest; 3rd pair with 2 black rings, 1 just below the base, the other at the apex; *tarsi;* base of the 2nd joint, and apex of the 3rd, black.

Abdomen above and beneath very finely crenate, and with very short, fine, gray hairs; *Connexivum;* at the base of each segment a

large, triangular, orange spot; *Genital segments* in the ♂ pitchy yellow.

Length, 3½ lines.

Common among bushes, long grass, &c., in the autumn.

Species 3.—NABIS LIMBATUS.

MIRIS FERUS, var. β, *Fall.* Hem. Succ. 112, 9 (1829); *Zett.* Ins. Lap. 281, 6 (1840).

NABIS LIMBATUS, *Dahlb.* Vet. Akad. Handl. 227 (1851); *Flor*, Rhyn. Liv. i, 695, 2 (1860); *Fieb.* Wien. Ent. Monats. vii, 62, (1863).

Narrow, ochreous; above with very fine, scarcely perceptible hairs; beneath with longer and more prominent hairs. *Antennæ* very thin, ¾ the length of the insect; *pronotum* long-trapezoidal, the sides nearly straight, and on the middle region with black irregular marks pointing towards the middle of the disk; the centre with a strong black longitudinal line. *Elytra* very short, not reaching to the 2nd abdominal segment, posteriorly rounded; *connexivum* in the ♂ very narrow, in the ♀ very broad.

Head.—Crown with 2, generally black, slightly curved lines diverging from the ocelli (sometimes united behind them) to the front of the eyes; *Face;* a black line at the sides of the central lobe. *Antennæ* pale yellow, very thin, ¾ the length of the insect; 1st joint longer than the head, and only a little thicker than the others; 1st and 2nd at the apex, 3rd and 4th entirely, piceous. Antenniferous processes black, except at the apex. *Eyes* black. *Ocelli* red-brown. *Rostrum* yellow, or brown towards the end, apex black.

Thorax.—Pronotum narrow, long; the anterior annulus sharply defined; sides nearly straight, very little expanded posteriorly; disk down the middle with a thick, black line, narrower anteriorly and posteriorly; the middle region raised, convex, clearly defined before and behind, with black, irregular, somewhat raised, transverse markings on the sides, pointing inwards, sometimes outwardly connected and forming 2 [-like marks on each side; the posterior region flatter,

sometimes with a fuscous streak on each side of the middle line. *Scutellum* convex, middle black, sides yellow; basal angles depressed, the depression defined by a diagonal, curved black line. *Elytra* pale ochreous, indistinctly fuscous between the nerves, very short, not reaching to the 2nd abdominal segment, posteriorly somewhat squarely rounded; *Clavus* and *Corium* not perceptibly divided; *Membrane* very rudimentary. *Sternum* narrowly black round the coxæ, broadly black on the sides in continuation of the lateral line on the abdomen. *Legs* pale yellow; *thighs* with fine black punctures in rows; 1st and 2nd pairs with fine, black, transverse lines beneath; 3rd pair not thickened to the apex.

Abdomen in the ♂ with parallel sides; above, generally with 3 brown, longitudinal lines, the middle one narrowest, or entirely black. *Connexivum* pale-yellow, in the ♂ very narrow; in the ♀ very broad, foliaceous, reflexed, rounded on the margin, generally with a rose-pink streak down the middle. Underside with a narrow black line down the middle, and a broader one on each side.

Length, $3\frac{1}{2}$—4 lines.

Common among grass under bushes, from July to October.

This species, we believe, is frequently passed over as the pupa of *N. ferus* or *flavomarginatus;* but the presence of ocelli and claws shews it is adult. It may readily be distinguished from all our other species by the greater length of the antennæ, and the larger size and falcate form of the lateral processes of the genital segments. Does it ever have developed elytra?

Species 4.—NABIS DORSALIS.

NABIS DORSALIS, *L. Duf.* Rech. 62, 1, t. 5, fig. 55 (1833); *Am. et Serv.* Hém. 332, 4 (1843); *Flor,* Rhyn. Liv. ii, 618 (1861).
— ERICETORUM, *Scholz,* Arb. u. Veränd. 113, 3 (1846); *Fieb.* Europ. Hem. 160, 3 (1861).
— FUMINERVIS, *Dahlb.* Vet. Akad. Handl. 224 (1851).
— FERUS, var. *Flor,* Rhyn. Liv. i, 700, 2 (1860).
— BREVIS, *Scholtz, Fieb.* Europ. Hem. 160, 3 (1861).

Narrow, elliptic, dull ochreous, often with a roseate flush. *Head* and *pronotum* with a central, longitudinal, black line; *corium* with 2 black spots, and 1 on the membrane-suture. *Abdomen* black; *connexivum* carmine at the base.

Head narrow, widest behind the eyes; *Crown* with a subtriangular black mark, narrowest behind, reaching from the face to the ocelli, dividing into 2 lines just before them; base of the antenniferous processes and the sides behind the eyes black; *Face;* central lobe black at the sides. *Antennæ* yellow-brown, 3rd joint at the apex, and the 4th and 5th entirely, piceous or black. *Eyes* black. *Ocelli* red-brown. *Rostrum* yellow-brown; 2nd joint with a black line above.

Thorax.—Pronotum gradually widened throughout, yellow-brown, the centre with a black longitudinal line, wide in the middle, very narrow posteriorly, and sometimes not extending over the anterior annulus; in the transverse depression of the disk a fine impressed line, sometimes black, sometimes uncoloured, leaves the central line almost at a right angle, and curving round, encloses a considerable space; hinder angles and an indistinct, short, pale line on each side of the central black line, ochreous; anterior margin and sides of the annulus sometimes black. *Elytra*, when developed, not so long, or a little longer, than the abdomen; *Corium* very long; nerves pale, the 1st with a black spot beyond the middle, and another smaller one just beyond it, close to the membrane-suture; membrane-suture with a black spot near the apex; *Membrane* short (sometimes but partially developed), ochreous or fuscous, with darker nerves; the central cells extend nearly to the posterior margin. *Sternum* black, round the 1st pair of coxæ whitish; sides with a broad yellow stripe. *Legs* ochreous, with very short whitish hairs; *thighs* with brown spots in longitudinal rows; *tibiæ;* the dentation of the 1st and 2nd pairs beneath black; *tarsi* yellow-brown; end of the last joint, and the *claws*, black.

Abdomen above, black, or suffused with red; *Connexivum* carmine at the base, yellowish above: underside black, with very short, appressed, whitish hairs; on each side of the middle a broad, longitudinal, red stripe. *Genital segments* reddish or yellowish.

Length, 3½ lines.

Common among heather, in autumn.

Species 5.—Nabis flavomarginatus.

Nabis flavomarginata, *Scholz.* Arb. u. Veränd. 114, 6 (1846).
— flavomarginatus, *Flor*, Rhyn. Liv. i, 696, 3 (1860); *Fieb.* Europ. Hem. 161, 5 (1861).
— dorsatus, *Dahlb.* Vet. Akad. Handl. 227 (1850).
— nervosus, *Bohem.* Vet. Akad. Förh. 77, 35 (1852).

Above fusco-ochreous. *Head* with a broad, central, black line. *Pronotum;* middle and sides with a black line. *Scutellum* black; sides pale ochreous. *Elytra: corium;* anterior margin on the basal ½ pale ochreous, nerves pale; *membrane* paler than the corium, with strong fuscous nerves. *Thighs* with rows of large brown spots; 1st and 2nd pairs beneath with transverse lines; 1st pair with a broad black stripe down the inner side; 2nd piceous at the end; 3rd black on the last 3rd. *Abdomen* above, black; beneath, the middle, and sides ochreous.

Head with prominent whitish hairs; the centre with a broad black line, widening to the front, extending from the base to the front of the clypeus, passing between the ocelli, and leaving a narrow yellow line on the sides; behind the eyes black; antenniferous processes black, shining, the apex yellow; *Face;* central lobe black; a yellow spot at the end of the side lobes. Underside black, the middle and sides yellow. *Antennæ* yellow-brown; apex of 3rd joint, and 4th and 5th entirely, piceous. *Eyes* and *Ocelli* piceous. *Rostrum* yellow-brown; 1st joint black on the middle and sides; 2nd with a brown line.

Thorax.—Pronotum with fine, short, whitish hairs; sides, beyond the annulus, gradually widening in a curve to the constriction; centre and sides with a broad black line, the central one continued narrowly on the posterior 3rd, previously, at the transverse depression, giving out on each side, at a right angle, a short, stout, black line, at the end of which is a smooth space, bounded (except posteriorly) by an impressed narrow line, which is sometimes black; side margins narrowly ochreous; posterior 3rd wide and convex, paler than the rest, with 2 or 3 fuscous lines on each side of the central line. *Scutellum* black, sides with an ochreous spot gradually narrower to the apex. *Elytra* as long as the abdomen, fusco-ochreous; *Corium;* anterior margin with an ochreous stripe, gradually nar-

rower to the middle; nerves pale; *Membrane* paler than the corium; nerves fuscous. *Sternum* black, sides yellow; *Prosternum* round the coxæ, *Meso-* and *Metasternum*, outside the coxæ, ochreous. *Legs* ochreous, with fine whitish hairs; *coxæ* with a large black spot at the base; *thighs* with rows of large brown spots, the underside of 1st and 2nd pairs with fine transverse lines; 1st pair with a broad black stripe on the inner side; 2nd piceous or blackish at the end; 3rd black on the last 3rd; *tibiæ* with a fuscous spot below the base and at the apex; *tarsi*; base of the 2nd joint, base and apex of the 3rd, and the *claws*, piceous.

Abdomen above, black, shining, without hairs; beneath black, slightly shining, with fine whitish hairs, the middle and sides ochreous; stigmata black; *Connexivum* ochreous. *Genital segments*; margins ochreous.

Length, 3½—4 lines.

Common from July to October, under bushes, plants, and field refuse.

Species 6.—Nabis ferus.

Cimex ferus, *Lin.* F. S. 962 (1761); S. N. 731, 108 (1767).
Miris — *Fab.* S. R. 255, 11 (1803); *Fall.* Hem. Suec. 133, 9 (1829).
— vagans, *Fab.* S. R. 255, 12 (1803); *Wolff*, Ic. Cim. 153, t. 16, fig. 153 (1804).
Nabis — *Burm.* Handb. ii, 242, 1 (1835); *Scholtz.* Arb. u. Veränd. 112, 1 (1846).
— ferus, *Hahn*, Wanz. iii, 31, t. 83, fig. 252 (1835); *Am. et Serv.* Hém, 332, 3 (1843); *Flor*, Rhyn. Liv. i, 698, 4 (1860); *Fieb.* Europ. Hem. 161, 9 (1861).

Pale ochreous, dull, with very fine, short, pale hairs. *Head* with a black line down the centre; sides with a black spot before and behind the eyes. *Pronotum* on the first ⅔rds yellow-brown, with a strong, black, central line; hinder 3rd much widened. *Scutellum* black, sides yellow. *Elytra* much longer than the abdomen; *clavus* with a black spot at the apex; *corium* with 2 black spots on the 1st nerve, and 1 on the membrane-suture; *membrane* pale, the nerves fuscous. *Legs* with longitudinal rows of small black or brown spots, narrow and perceptibly transverse on the 2nd pair of thighs. *Abdomen* black, beneath yellow in the middle, with a central black line; *connexivum* pale ochreous.

Head.—Crown; in the middle a stout black line from the ocelli to the base of the face; sides black before and behind the eyes; *Face;* central lobe at the sides narrowly black. *Antennæ;* 1st joint shorter than the head; 1st 3 joints yellow-brown, 3rd at the apex, and 4th and 5th entirely, piceous-black. *Eyes* piceous. *Ocelli* red-brown, shining. *Rostrum* yellow-brown, apex black.

Thorax.—Pronotum; the 1st $\frac{2}{3}$rds gradually widened behind the annulus, yellow-brown, the centre with a broad black line (sometimes not extending to the front); sides sometimes black; the posterior 3rd suddenly much and roundly widened, convex, more or less suffused with fuscous, the central line fine, brown, sometimes on each side of it a pale line; posterior margin slightly concave. *Scutellum* black, sides ochreous or yellow. *Elytra; Clavus* with a black spot at the apex; *Corium;* nerves somewhat pale, with 2 small black spots on the 1st, the 1st spot beyond the middle, the other at the end; membrane-suture with a black spot near the apex of the corium; *Membrane* pale, with fuscous nerves; the nerves of the 3 middle cells do not reach the base, and from each of the 2 middle nerves proceed a side nerve, longitudinal, but not extending to the end of the cells, that in the 1st cell longest. *Sternum* black, sides, outside the coxæ, with a broad yellow stripe; *Prosternum* in front and around the coxæ yellow, the middle with a black spot. *Legs* with fine pale hairs; *thighs* with longitudinal rows of brown or black spots on the 1st and 2nd pairs beneath, forming fine transverse lines; *tibiæ;* on the 1st and 2nd pairs, the small teeth beneath black; *tarsi* brownish-yellow, apex of the 3rd joint, and *claws*, black.

Abdomen above, black; beneath yellow or ochreous, with a central narrow line and the sides broadly black; *Connexivum* ochreous.

Length, $3\frac{1}{2}$ lines.

Common among grass under bushes in autumn, winter, and spring.

Sub-Div. 2.—Hydrodromica.*

Section 1.—*HYDROMETRINA.*†

Family 1.—HYDROMETRIDÆ.

Genus 1.—Hydrometra, *Fab.*

Long, narrow, stout; sides subparallel; above dull, velvety; beneath with very short, appressed, glossy pile.

Head long, 5-sided; above curved, beneath flat; *Crown* with parallel sides; *Face* triangular, deflected in a curve; central lobe prominent, side lobes very short. *Antennæ* inserted before the eyes, but nearer to the apex of the head than to them, on a small horizontal process, filiform, 5-jointed; 1st joint longer, but scarcely stouter than either of the others; 3rd very minute. *Eyes* large, hemispherical, flattened on the inner margin, inserted close to and projecting laterally beyond the anterior angles of the pronotum. *Ocelli* inserted between the eyes near the base of the head, inconspicuous. *Rostrum* curved, free, reaching to the 1st pair of coxæ, 4-jointed; 1st and 2nd joints short, stout; 3rd longest, broadest at the base, and tapering onwards; 4th $\frac{1}{4}$th the length of the 3rd, acutely pointed: *labrum* broad and triangular at the base, then elongate and pointed.

Thorax.—Pronotum long, 5-sided (not quite so wide as the sternum, the rounded sides of which are visible from above), slightly widened to the hinder angles, which are mostly raised into a tubercle, thence posteriorly triangular; anterior margin straight; sides long, often incrassated, the margin turned underneath; hinder sides (*i. e.* of the scutellar process) long, rounded, convergent to a rounded point; disk deflected forward from the hinder angles, and backward behind them, the 1st 5th depressed, its sides parallel; in the middle a slight longitudinal keel, and usually a hollow on each side of it; the sides at the posterior extremity of this region constricted; the disk behind the anterior region flat-convex, more convex on the scutellar process, but its sides are broadly flattened and horizontal;

*Page 11. † Page 40.

the centre of the disk mostly with a longitudinal keel, which ceases before the apex of the scutellar process. *Elytra* (sometimes entirely wanting) flat, nearly or quite as long as the abdomen, lying within the connexivum; nerves strong, touching in places, and thus forming 5 long, narrow, closed cells, which do not reach the margins; the 2nd cell projecting beyond the others. *Sternum* with a shallow longitudinal channel, or convex, the sides next the pronotum separated from it by a deep longitudinal channel, so that the sides of the pronotum, although it is narrower than the sternum, are visible from beneath; *Prosternum* short, with a short rostral channel; *Mesosternum* very long, so that the 1st and 2nd pairs of legs are very far apart; *Metasternum* shorter. *Legs;* 1st pair shortest and stoutest, the *thighs* somewhat flattened, the *tibiæ* thickened to the apex, the sides channeled; 2nd and 3rd pairs long, sub-cylindrical, flattened beneath; 2nd mostly longest; *coxæ;* 1st pair inserted beneath the prosternum; 2nd and 3rd pairs cylindrical, inserted in a horizontal, semi-conical projection on the sides of the meso- and metasternum; *tarsi* 2-jointed; 1st pair stout, short; 2nd and 3rd pairs very long, filiform; *claws* very short, apex of the 2nd tarsal joint covering their insertion.

Abdomen above flat, beneath very convex; on the sides of each segment, within the connexivum, a fine, impressed, divisional line; *Connexivum* wide, reflexed; on the 6th segment produced posteriorly into a long and sharp, or triangular point, whereby the posterior margin of the segment becomes concave. *Genital segments;* in the ♂ 3; the 1st oblique, annular; the 2nd visible only beneath; the 3rd forms a conical or rounded apex; in the ♀ generally only 2 (2nd and 3rd) are visible above and beneath; the 1st of them quadrangular or reversed trapeziform, cleft in the middle but not parted; the 2nd like the last segment in the ♂.

The *Hydrometræ* live on the surface of running or stagnant water, where they propel themselves rapidly by the rowing motion of their 2nd and 3rd pairs of legs, feeding upon any insects that may come in their way, catching them by springing upon them. They can also dive when alarmed.

De Geer has given their natural history in the 3rd volume of his 'Mémoires.'

In apterous examples the scutellar process is shorter and less angulated.

The extension of the *Connexivum* long and narrow.—Sp. 1, 2.
The extension of the *Connexivum* short and triangular.—Sp. 3—6.

Species 1.—HYDROMETRA PALUDUM.

GERRIS PALUDUM, *Fab.* E. S. iv, 188, 2 (1794); *Schum.* Beitr. 29, 1, t. 4, figs. 3, 5—13 (1832); *L. Duf.* Rech. 71, 2 (1833); *Curt.* B. E. xii, 553, 1 (1835); *H. Schf.* Nom. Ent. 1, 62 (1835); *Am. et Serv.* Hém. 417, 1 (1843).

HYDROMETRA PALUDUM, *Fab.* S. R. 258, 3 (1803); *Burm.* Handb. ii, 210, 1 (1835); *Zett.* Ins. Lap. 281, 1 (1840); *H. Schf.* Wanz. ix, 67 & 70, t. 300, fig. 926 (1850); *Flor*, Rhyn. Liv. i, 732, 1 (1860); *Fieb.* Europ. Hem. 106, 2 (1861).

Above brown-black; beneath blueish-gray, silvery in certain aspects slightly shining. *Head* with a whitish line at the sides. *Antennæ* black; 1st joint almost as long as all the others together. *Pronotum* slightly widened to the hinder angles, the sides there raised into a dwarf, obtuse tubercle; disk nearly flat, with a fine central raised line; scutellar process convex; the under-curved sides of the middle region yellow. *Elytra* brown-black; nerves black; *Connexivum* narrowly yellow-brown on the margin, the long terminal spines reaching rather beyond the genital segments, directed upwards, the sides projecting at the base, the points slightly convergent.

Head long; sides with a whitish line; base with a short transverse yellow line going obliquely from the middle towards the middle of each eye. *Antennæ* black; 1st joint almost as long as all the others together; 4th rather shorter than the 2nd. *Eyes* black, shining. *Ocelli* and *Rostrum* black.

Thorax.—Pronotum; anterior region flat, with a short, yellow, longitudinal line in front; middle region slightly widened to the hinder angles, sides sharply defined, at the hinder angles raised into a dwarf, obtuse tubercle; the under-curved margins with a yellow line of equal width throughout; disk slightly convex, finely crenate punctate, obscured by the pile, and with a fine central raised line; scutellar process convex, the margins narrowly flattened. *Elytra* brown-black, as long as the abdomen (sometimes abbreviated);

nerves black, at the base with yellow hairs. *Sternum; Prosternum* depressed, yellow, with a fuscous shade in the middle; *Mesosternum* in front, between the coxæ, with a narrow longitudinal channel, which is widened and shallow posteriorly; on the side of the coxal sheaths a silvery line; sides next the pronotum dull black, the colour divided into 2 lines by a silvery streak; sheath of the 2nd and 3rd pairs of coxæ black above, pale yellowish beneath. *Legs;* 2nd pair slightly the longest; *coxæ* black, the ends yellow-brown; *fulcra* yellow-brown, blackish in the centre; *thighs* black above, gray-brown beneath; 1st pair slightly yellow at the base; 2nd pair shorter than the 3rd; *tibiæ;* 2nd pair longer than the 3rd; *tarsi;* 2nd pair, 1st joint 3 times longer than the 2nd; 3rd pair, 1st joint nearly twice as long as the 2nd.

Abdomen beneath, in the middle almost keeled, the sides of each segment, except the last, on the posterior margin, with a short silvery streak or spot; the posterior margin of the 6th segment in the ♂ with a somewhat right-angled excision; in the ♀ only slightly concave; *Connexivum* on the margin narrowly yellow-brown; the terminal spine black, directed obliquely upwards, subequal in thickness throughout, outwardly convex, inwardly concave, reaching rather beyond the genital segments in both sexes; in the ♀ a little curved outwards at the base, but converging at the apex, which is suddenly acute. *Genital segments* beneath; in the ♂, the 1st with a tubercle; 2nd long, semioval; 3rd short, rounded; in the ♀, the 1st yellow-brown, subtrapezoidal, the base convex; the sides much compressed, hollow, with a subangulated prominence near each basal angle; 2nd black, semioval.

Length, 5¾—6½ lines.

Scarce. Locality not recorded.

Species 2.—HYDROMETRA NAJAS.

CIMEX NAJAS, *De G.* Mém. iii, 313, t. 16, fig. 9 (1773).

GERRIS APTERA, *Schum.* Beitr. 2, 34, 3, t. 4, figs. 4, 20—24 (1832).

— CANALIUM, *L. Duf.* Rech. '39, t. 5, fig. 59 (1833); *Am. et Serv.* Hém. 418, 3 (1843).

— PAUSARIUS, *Curt.* B. E. xii, 553, 2 (1835).

HYDROMETRA APTERA, *Bohem.* Vet. Akad. Förh. 79, 38 (1853); *Kolen.* Mel. Ent. vi, 58, 263 (1857); *Flor,* Rhyn. Liv. i, 734, 2 (1860).

HYDROMETRA NAJUS, *Fieb.* Europ. Hem. 107, 3 (1861).

Above dull brown-black; beneath dull ashy gray. *Antennæ* black; 1st joint as long as all the others together. *Pronotum* without tubercles at the hinder angles; the scutellar process short, rounded. *Elytra* and *wings* entirely wanting in the vast majority of examples. *Connexivum* deep, concolorous with the abdomen; the projecting points straight, acute, not so long as the genital segments.

Head long, the sides without a white line, the base often with a small, transverse yellow line. *Antennæ* black; 1st joint as long as all the others together; 2nd, 4th and 5th subequal. *Eyes* black, shining. *Ocelli* black. *Rostrum* black; 4th joint with a long, filiform, brown point.

Thorax.—Pronotum long; sides sharply defined, almost parallel, very slightly curved inwards in the middle; the 1st region only incrassated at the sides and raised into 2 broad lobes which join in front, and are posteriorly separated by a deep impression; the disk, as far as the hinder angles, flat, punctured, anteriorly transversely crenate, the centre with a fine raised line, hinder angles not raised; the under-curved margin black; the scutellar process short, slightly convex with a slight keel, the margin but narrowly flattened. *Sternum; Prosternum* depressed, yellowish; *Mesosternum* depressed in the middle in the ♂, convex in the ♀, the sides rounded off, the part of the sides next the pronotum visible from above, dull black bordered by a glossy white line, the rest dull ashy gray, or blackish anteriorly, in front with a very slight, short channel; *Metasternum* convex. The sheath of the 2nd and 3rd pairs of *coxæ* black above, light yellowish-gray beneath. *Legs* black, gray-brown beneath; 2nd pair of *coxæ* stouter and more projecting than the 3rd; *thighs;* 1st pair at the base narrowly yellow; 2nd and 3rd pairs in length subequal; *tibiæ;* 2nd pair longest; 3rd pair shorter than the thighs; *tarsi;* 2nd pair, the 1st joint 3 times longer than the 2nd; 3rd pair, 1st joint 1¼ time longer than the 2nd.

Abdomen above black, with a fine, interrupted, gray line down the middle; *Connexivum* deep, concolorous with the abdomen, with a fine brownish line on the junction of the segments: beneath dull ashy gray, without a keel, the middle with a fine dark line; the posterior margin of the 6th segment deeply, regularly concave in the ♂, less deeply in the ♀. *Genital segments* above, slightly convex; in the ♂, the 1st, quadrangular, reaches much beyond the points of the con-

nexivum; the 2nd short, triangular; beneath, the 1st long, its posterior margin sinuate, lengthened on the sides; the 2nd lies within the 1st, deflected, its posterior margin broadly rounded; the 3rd as on the upperside: in the ♀ above, the 1st segment, reversed trapeziform, does not reach to the points of the connexivum; the 2nd, narrow, obconic, is longer than the 1st, and projects much beyond the points of the connexivum; beneath, the 1st gradually narrowed posteriorly, its posterior margin rounded, the sides compressed into a hollow towards the base, but at the basal angles prominent; the 2nd as on the upper side.

Length, ♂ 6; ♀ 7½ lines.

In winged examples the *pronotum* is somewhat widened to the hinder angles, which are raised into a small rounded tubercle, and the scutellar process is more produced; the *Elytra* are dark brown or black, sometimes as long as the abdomen, sometimes abbreviated; the nerves strong, brown, with golden hairs; the *Wings* whitish, with a fuscous shade, iridescent; in other respects the winged are like the apterous specimens.

The apterous form is common on streams from April to October, where the insects run with rapidity against the current; but among hundreds of examples taken at different periods of the summer, we never found one with wings. But Mr. Dale once took 3 pairs winged in his own pond, where the water is nearly stagnant; into this pond, a few days previously, he had put 3 pairs of apterous specimens taken from a stream; and although he cannot prove they were the same that he afterwards caught, he believes they were, as he never found the species in his pond before or since.

Species 3.—Hydrometra thoracica.

Gerris thoracica, *Schum.* Beitr. 2, 46, 8 (1832); *H. Schf.* Nom. Ent. 63 (1835).

— rufoscutellata, *Curt.* B. E. xii, 553, 3 (1835).

Hydrometra thoracica, *H. Schf.* Wanz. ix, 67 & 71, t. 301, fig. 928 (1850); *Flor*, Rhyn. Liv. i, 739, 5 (1860); *Fieb.* Europ. Hem. 108, 6 (1861).

Above black-brown; the *pronotum* in the middle of the hinder ½, broadly reddish or yellowish-brown, the undercurved side margins yellow from the constriction to the hinder angles.

Underside black with a slight silvery gloss. *Antennæ* light brown. *Legs* light-brown; *thighs* paler beneath; 1st pair black, yellow beneath, the colour broader and paler on the inner side at the base.

Head; at the sides a narrow silvery line. *Antennæ* light-brown, the ends of the joints darker; 3rd extremely minute; 4th dark-brown. *Eyes* and *Ocelli* black. *Rostrum* black; 1st and 2nd joints dusky-yellowish.

Thorax.—Pronotum; the 1st region posteriorly not defined, its middle with a slight yellow keel; hinder angles raised into a long obtuse tubercle; disk behind the anterior region in front slightly, transversely crenate; as far as the hinder angles without a perceptible keel, but with a slight, broad, longitudinal depression on each side of the middle; the undercurved sides posterior to the constriction, with a yellow line, broad posteriorly, narrow anteriorly; scutellar process convex, reddish or yellowish-brown in the middle, the colour extending forwards to before the hinder angles, and gradually merged into the darker colour of the disk, posteriorly, generally extended to the apex; the middle with a slight keel ceasing at the broad, flattened margin. *Elytra* black-brown, viewed obliquely with a blueish shade, and sometimes with 2 yellowish streaks; nerves black, with golden scale-hairs. *Wings* white, on the anterior margin a rather large, pale, brownish-gray spot. *Sternum* black with a whitish gloss; *Prosternum* yellowish towards the sides, which, seen from above, are bright silvery; *Mesosternum* with a fine, shallow, middle channel, deepest in front, and a slight, short, raised line on each side of it diverging backwardly towards the coxæ; the sides viewed from above dull black bounded by glossy, brassy hairs; *Metasternum* in the ♂, with a scarcely perceptible black tubercle. Sheath of the 2nd and 3rd pairs of coxæ above black, beneath pale ochreous, margined internally with a black line and the 2nd pair, more inwardly on the mesosternum, with a silvery gray line. *Legs; coxæ* black above, pale ochreous beneath; *fulcra* pale ochreous, with a long black spot in the middle, most perceptible on the 1st pair; *thighs;* 1st pair black with a silvery gloss, the underside brownish-yellow on the apical ½, with a broad black line in the middle; the basal ½ clear, pale ochreous; 2nd and 3rd pairs in length subequal, light brown, paler beneath; *tibiæ* and *tarsi* brown, merging into black, those of the hinder legs, together, a little longer than the

2nd pair of tibiæ; *tarsi;* 2nd pair, 1st joint twice as long as the 2nd; 3rd pair, 1st joint 1¼ time as long as the 2nd.

Abdomen above dull black, the middle with a gray, posteriorly widened, middle streak; *Connexivum* throughout, yellow outwardly, posteriorly the colour occupies the entire breadth, the margin brown. Underside black, with a slight silvery gloss, the middle with a slight, depressed keel; the 6th segment posteriorly yellowish, somewhat prominent at the sides; its posterior margin not very deeply concave, but in the ♂ with a large rounded excision in the middle. *Genital segments;* in the ♂ extending much beyond the points of the connexivum, beneath ochreous; the 1st brown in the middle, in the ♀ not extending much beyond the points of the connexivum, sharp in the middle, the sides compressed, sloping obliquely outwards, and with a deep oblique impression.

Length, 4½—5½ lines.

Common on stagnant and running water from April to September.

Species 4.—HYDROMETRA GIBBIFERA.

GERRIS GIBBIFERA, *Schum.* Beitr. 2, 41, 6, t. 3, figs. 5—7 (1832); *H. Schf.* Nom. Ent. 1, 62 (1835).
HYDROMETRA — *Fieb.* Europ. Hem. 108; 9 (1861).

Above brown-black; beneath black with white or brassy lustre. *Antennæ* black or brown-black. *Pronotum;* anterior angles with a rounded tubercle; the middle next the anterior margin with a short, thick, longitudinal yellow line; the undercurved side margins of the middle region only, yellow; *Metasternum* of the ♂ with a large orange tubercle. *Anterior thighs* black; on the basal ⅓ inwardly and beneath, yellow.

Head punctured, the sides and the antenniferous tubercles glossy yellowish-white; *Face;* central lobe at the end and the cheek-plates yellow. *Eyes* and *Ocelli* black. *Rostrum* black, the base outwardly yellow.

Thorax.—Pronotum deeply punctured, in the middle crenate, the punctures obscured by the pilosity; anterior angles with a round, obtuse tubercle; the 1st 5th very hollow on each side of the keel, which is depressed, but a little raised in front, and with a short,

thick yellow line, the sides of this anterior region much thickened, curved in and raised posteriorly; the tubercle on the hinder angles large; the undercurved side margins from under the hinder angles to the constriction with a yellow line, broadest posteriorly; the disk with a very slight, central, longitudinal keel. *Elytra* black-brown, with blueish shades in patches, the nerves clothed with golden, scale-like hairs; *Sternum; Prosternum* yellow, with a large black spot not reaching to the anterior margin; *Meso-* and *Metasternum* black, the sides with longish, appressed, silky, white or brassy hairs, the part next the pronotum, visible from above, less lustrous, and the black colour in certain lights divided into 2 lines; mesosternum in front depressed into a narrow longitudinal channel, in which rises a fine keel, which extends along the metasternum; from each side of this keel anteriorly another similar one diverges at a considerable angle, but they cease beyond the middle of the segment; the inner side of the sheath of the 2nd pair of coxæ with a silvery line, the sheath itself beneath with a large triangular yellow spot; *Metasternum;* in the ♂ the central keel is replaced by a large, transverse, orange tubercle; in the ♀ the keel is sometimes yellowish, and in the middle the colour spread out, sometimes also the middle is slightly raised; the sheath of the coxæ marked as in the mesosternum. *Legs;* 2nd pair longest; *coxæ* black, beneath partly or wholly yellow; *fulcra* yellow, with a brown or black spot; *thighs;* 1st pair black, on the basal ½ inside and beneath yellow, the colour ending in a point ⅓ way up, or faintly continued to the apex (viewed from above the basal ½ internally appears diagonally yellow); the outer side with a narrow, obscure, yellow line; 2nd and 3rd pairs in length subequal, brown above, yellow-brown beneath, apex black; *tibiæ* brown, paler beneath; 2nd pair longer than the 3rd; *tarsi* black; the tibiæ and tarsi much longer on the 2nd than on the 3rd pair.

Abdomen above, dull black, the middle with a gray line; the posterior margin of the 6th segment, in the ♂, reddish-yellow; *Connexivum* with a reddish-yellow line down the middle, broader towards the end, the side next the abdomen black, the margin with a brown line. Underside with a slight middle keel; ♂ black, with a brownish line on the keel, the 6th segment posteriorly yellow, the posterior margin very concave, and in the middle a deep round notch; ♀ black, the middle with a dull yellowish line widened on the 5th and 6th segments. *Genital segments;* ♂ above, black, the 1st convex,

reaching far beyond the points of the connexivum, the sides parallel, the posterior margin rounded; 2nd short, obtuse; beneath brown, 1st and 2nd very convex, in length subequal, the sides parallel, with a very narrow, projecting keel low on the sides; 3rd very short, obtuse; ♀ above black; 1st segment not reaching to the points of the connexivum, flat, the sides hindwardly convergent, yellow; posterior margin straight; 2nd short, narrowed posteriorly, apex obtuse; beneath, brown-yellow; 1st in the middle sharply keeled, the sides much flattened and depressed, but at the basal angles with an abrupt, oblique elevation; the 2nd as on the upper side.

Length, 4½—5½ lines.

Common on stagnant and running water, from April to September.

Species 5.—Hydrometra lacustris.

Cimex lacustris, *Lin.* F. S. 970 (1761); S. N. 732, 117 (1767).
Gerris — *Schum.* Beitr. 2, 43, 7, t. 3, fig. 11 (1832); *Curt.* B. E. 553, 5 (1835); *H. Schf.* Nom. Ent. 63 (1835); *Am. et Serv.* Hem. 417, 2 (1843).
Hydrometra lacustris, *Burm.* Handb. ii, 210, 2 (1835); *H. Schf.* Wanz. ix, 68 & 73, t. 301, fig. 930 (1850); *Flor*, Rhyn. Liv. i, 742, 7 (1860); *Fieb.* Europ. Hem. 109, 10 (1861).
Gerris variabilis, *Curt.* B. E. xii, 553, 4 (1835).

Above brownish-black, dull; *head, pronotum,* and nerves of the elytra with minute, golden, scale-like hairs; beneath black with a glossy, white pile, in certain lights with a brassy tinge; the abdomen of the ♀ in the middle broadly yellow, with a central black line. *Antennæ* black; 1st joint rather shorter than the 2nd 3rd and 4th together. *Pronotum* rather strongly punctured; the 1st 5th strongly, roundly incrassated at the sides; the middle with a short yellow line, the undercurved sides with an interrupted yellow line. *Fore-thighs* yellow-brown; the upper half above and beneath with a black line.

Head rather strongly punctured; *Face,* on the sides, and the antenniferous processes glossy, silvery-white. *Antennæ* black; 1st joint rather shorter than the 2nd 3rd and 4th together; 2nd and 4th in length subequal; 5th longer than the 2nd. *Eyes* black, shining. *Ocelli* obscure yellow. *Rostrum* black, the base yellow.

Thorax.—Pronotum; the 1st 5th very concave, at the anterior angles a small tubercle, the sides rounded, much incrassated; the middle with a short, longitudinal, yellow line in front; sides, viewed from beneath, from the anterior to the raised hinder angle with a yellow line, widest posteriorly, interrupted at the constriction by a black line coming obliquely from above, the anterior portion of the yellow line on a higher level than the posterior part; disk; down the middle, a somewhat strong keel, rather deepest on the scutellar process. *Elytra* black, sometimes with pale spots between the nerves; nerves with golden scale-like hairs. *Wings* whitish, fuscous posteriorly, iridescent. *Sternum; Prosternum* depressed, yellow, with a large quadrate, black spot in the middle not reaching quite to the anterior margin; *Meso-* and *Metasternum* very convex, black; *Metasternum* with a slight keel, but without a tubercle. *Legs;* 1st pair; *fulcra* yellow, outwardly black; *thighs* yellow-brown, paler at the base; on the upper ½, above and beneath, a narrow, pointed, black line; *tibiæ* brown, outwardly with a line, a spot at the apex, and very short hairs, black; *tarsi* black: 2nd and 3rd pairs, sheath of the coxæ beneath, diagonally pale yellow on the posterior ½; *coxæ* and *fulcra* pale yellow; *thighs* yellow-brown, paler at the base, the sides with a brown line, the apex brown-black; 2nd pair longer than the 3rd; *tibiæ* black, 2nd pair as long as the tibiæ and tarsi together of the 3rd pair of legs; *tarsi* black; 2nd pair, the 1st joint nearly 4 times longer than the 2nd; 3rd pair, 1st joint 2¼ times longer than the 2nd.

Abdomen above, black, beneath with a slight middle keel, which becomes obsolete posteriorly; underside, in the ♂ black; the 6th segment posteriorly yellow, its posterior margin very concave, and in the middle a deep round notch; in the ♀ deep black at the sides, the middle broadly yellow-brown, with a central, narrow black line on the keel; *Connexivum* widened posteriorly, the margin with a brown line. *Genital segments* above, black; in the ♂ the 1st reaches much beyond the points of the connexivum, sides parallel, posterior margin straight; the 2nd short, narrow, the end rounded: beneath yellow-brown, the 2nd slightly keeled posteriorly: in the ♀ beneath, yellow-brown, the 1st flattened on the sides, and with an oblique depression, the middle keeled at the base; the 2nd short, rounded.

Length, 4—4½ lines.

Common on stagnant water from April to September.

Species 6.—Hydrometra argentata.

Gerris argentata, *Schum.* Beitr. 2, 49, 9 (1832); *H. Schf.* Nom. Eut. 1, 63 (1835).
— apicalis, *Curt.* B. E. xii, 553, 6, pl. 553 (1835).
Hydrometra — *H. Schf.* Wanz. ix, 68 & 74, t. 301, fig. 932 (1850); *Flor,* Rhyn. Liv. i, 740, 6 (1860); *Fieb.* Europ. Hem. 109, 12 (1861).

Above black-brown; beneath black, with a silvery gloss in oblique aspects. *Antennæ* black. *Pronotum* with a slight middle keel ceasing on the scutellar process, with a short, dull yellow line in front, posteriorly silvery, shining, the flattened margin of the process with short, silvery shining hairs. *Elytra* black-brown, in certain lights blue-gray; sheaths of the middle *coxæ* perceptibly keeled on the outer side. *Legs* black; 1st pair of *thighs* yellow at the base on the inner side.

Head; sides with a silvery white line. *Antennæ* black; 1st joint shorter than the 2nd 3rd and 4th together; 3rd extremely minute; 5th longer than the 2nd. *Eyes* and *Ocelli* black. *Rostrum* black, 2nd joint yellowish.

Thorax.—Pronotum; 1st region flat, with a slight keel, the anterior ½ of which has a dull yellow line; the sides incrassated, rounded; sides of the middle region rounded off, but produced at the hinder angles into a dwarf tubercle; the undercurved margin in both regions with a narrow yellow line, broadly interrupted at the constriction; disk flattish, punctate-granulate, with a fine central, bare, silvery, shining keel; scutellar process more convex, the keel almost imperceptible, the sides and apex rounded, the flattened margin narrow, clothed with shining, silvery hairs. *Elytra* black-brown, in oblique aspects blue-gray; nerves with brassy scale-hairs. *Wings* fuscous-brown, white on the basal 3rd. *Sternum* black; *Prosternum* with a yellowish spot towards each side; *Mesosternum;* sides viewed from above black, divided into 2 lines by a silvery-gray longitudinal streak; sheaths of the 2nd and 3rd pairs of coxæ black above and beneath, the posterior margin beneath narrowly yellowish, the outer sides of the 2nd pair perceptibly keeled; on the inner side a silvery line. *Legs; coxæ* black, yellow-

brown at the end; *fulcra* yellow-brown, with a long black spot on the middle, most perceptible on the 1st pair; *thighs; tibiæ* and *tarsi* black; *thighs* yellow-brown beneath, 1st pair yellow at the base on the inner side, 2nd and 3rd pairs in length subequal; *tibiæ;* 3rd pair and the *tarsi* together considerably shorter than the tibiæ of the 2nd pair.

Abdomen above dull black, with a fine, obscure, brown middle line; *Connexivum* black; the last 2 segments in the ♂, the last 4 in the ♀, outwardly with a brown-yellow line, widened a little posteriorly, the margin brown: underside black in the ♂, the middle gray, with a fine black keel on the basal segments; in the ♀, the middle with a broad, shallow channel ending on the middle of the 6th segment, in the centre of which is a very fine keel, and on the sides, in certain lights, long glossy spots; the posterior margin of the 6th segment, in the ♂, concave with a deep, round excision in the middle; in the ♀ regularly concave. *Genital segments* above; in the ♀ black, the 1st reaches beyond the short points of the connexivum, the sides rounded, the posterior margin straight; the 2nd short, narrow, obtusely pointed; beneath, the 1st yellow-brown, with a sharp middle keel, and a deep, triangular depression on the sides; 2nd as above.

Length, 2½—3½ lines; the smallest species.

Hitherto rare in collections. Taken by Mr. Dale, near Parley Heath, and at Wolmer Pond.

Family 3.—VELIIDÆ.

Genus 1.—Velia, *Lat.*

Stout, long sub-oval, angulated in front.

Head above 5-sided, at the side somewhat 4-sided; short, convex, across the eyes broader than the front of the pronotum; *Crown* prominent, in front curved vertically, and with a slight middle channel; sides rather concave between the eyes, dilated below and a little beyond them into short, triangular, antenniferous processes; *Face* very short, central lobe prominent; cheek-plates rounded, prominent. *Antennæ* 5-jointed, stout; 1st joint longest, stoutest, clavate, curved outwards; 2nd, 4th, and 5th thin at the base, in

length sub-equal; 3rd thin, very minute; 5th long-fusiform. *Eyes* very large, prominent, hemispherical, almost touching the pronotum. *Ocelli* near the base of the head, about equidistant from each other and the eyes. *Rostrum* reaching beyond the 1st pair of coxæ, stout, 3-jointed; 1st joint short, annular; 2nd long, subcylindrical; 3rd ⅓rd as long as the 2nd, acute.

Thorax.—Pronotum 5-sided, almost rhomboidal, much broader than the sternum; anterior margin short, straight, sides slightly sinuate, the margins broadly curved under, hinder angles produced above into a rounded tubercle, cut off outwardly in a short straight line; hinder sides as long as the fore-sides, prolonged to the end of the scutellar process in a slightly rounded line; disk regularly convex, but behind the anterior angles depressed into a large shallow fovea. (In apterous examples the pronotum is sub-trapeziform, the disk posteriorly shortly deflected to the posterior margin, which is broadly rounded beyond the hinder angles, not produced into a scutellar process, so that part of the mesonotum and the whole of the metanotum are uncovered.) *Elytra* (generally wanting); the nerves forming 4 closed cells, projecting behind the last, but not extending to the apex, curving inwards and forming a posteriorly open, apical cell. *Sternum;* the 3 segments of about equal length, so that each pair of legs is about the same distance apart; *Pro-* and *Mesosternum* in the middle depressed into a deep, angulated, wide furrow; *Metasternum* convex, posteriorly roundly-triangular; coxal sheaths large, cylindrical, the 1st and 2nd pairs posteriorly cut off straight; 3rd pair beneath, produced over the coxæ; the 2nd pair wider apart from each other than either the 1st or 2nd pair are, and projecting laterally. *Legs* stout, not very long; 1st and 2nd pairs of about equal thickness; 1st pair shortest, 2nd longest; *coxæ* stout, short, inserted in a hindwardly oblique direction; *thighs;* 1st pair a little thickened to the apex, longer than the tibiæ; 2nd pair cylindrical, about the same length as the tibiæ; 3rd pair stoutest, about the same length as the tibiæ, subfusiform, the apex obtuse, cleft (those of the ♂ much stouter than those of the ♀, and on the underside with 2 short sharp spines, and 2 rows of very small teeth); *tibiæ* scarcely thickened to the apex; the 3rd pair in the ♂ on the inner side, with minute distant teeth; *tarsi;* 1st pair short, stout, 1st and 2nd joints short, 3rd longer than the 1st and 2nd together; 2nd and 3rd pairs long-cylindrical, 2nd pair longest, 1st joint very short, 2nd longer than the 3rd; *claws* short.

Abdomen above, flat; beneath convex; the 6th segment longest, its posterior margin very concave; *Connexivum* deep, vertical, on the 6th segment produced into a long, triangular, sharp point. *Genital segments* in the ♂, above and beneath 2 are visible; above, the 1st transverse, quadrangular, its posterior margin beyond or in a line with the points of the connexivum; the 2nd at the base as wide as the 1st, posteriorly rounded; beneath, the 1st short, prolonged at the sides; the 2nd long convex, rounded posteriorly: in the ♀ above, only 1 is visible, not reaching quite so far as the points of the connexivum; beneath, 2 are visible; the 1st posteriorly rounded, reaching almost as far as the points of the connexivum; the 2nd, vertical and with a slight middle keel, fills up the opening at the end of the 1st, but does not project.

The insects of this genus live gregariously on the surface of water, where, as Schummel observes, they look like spiders, and they move rapidly about by little leaps.

Species 1.—VELIA CURRENS.

GERRIS CURRENS, *Fab.* E. S. iv, 193, 22 (1794).
HYDROMETRA CURRENS, *Fab.* S. R. 259, 12 (1803); *Fall.* Hem. Suec. i, 160, 2 (1829).
— RIVULORUM, *Wolff*, Ic. Cim. 201, 195, t. 20, fig. 195 (1811).
VALIA CURRENS, *Lat.* Gen. iii, 133, 2 (1807); *Curt.* B. E. i, 2, 1 (1824); *Schum.* Beitr. 2, 19, t. 1, fig. 8, t. 2, figs. 1, 2 (1832); *L. Duf.* Rech. 73, t. 5, fig. 65 (1833); *H. Schf.* Nom. Ent. 62 (1835); *Burm.* Handb. ii, 212, 1 (1835); *Am. et Serv.* Hém. 420, 2 (1843); *H. Schf.* Wanz. ix, 76, 77 (1850); *Flor*, Rhyn. Liv. i, 746, 1 (1860); *Fieb.* Europ. Hem. 105, 2 (1861).
VELIA RIVULORUM, *Curt.* B. E. 1, 2, 2, pl. 2 (1824).

Usually apterous; dull. *Head; antennæ* and legs black; *pronotum* reddish-brown, with 2 large, white, glossy spots behind the anterior angles, the undercurved side-margins and below them, orange. *Elytra* as long as the abdomen, brown-black, with 4 clear white spots, 2 at the base and 2 in the middle posteriorly. *Abdomen* above black, with a white spot at the sides of each segment; beneath orange, with a broad black line of spots on each side; *connexivum* orange, with a triangular black spot on the posterior margin of each segment.

Head black, with fine short hairs. *Antennæ* black, finely pubescent. *Eyes* and *Ocelli* black. *Rostrum;* 1st and 2nd joints dusky yellowish, the 2nd with a black line down the middle; 3rd black.

Thorax.—Pronotum reddish-brown; behind the anterior angles, on each side in the fovea, a large subrhomboidal spot, sharply angulated in front and rounded behind, clothed with shining, clear white pubescence; between these spots, close to the anterior margin, a transverse, dull, orange line, from the middle of which a short, raised, orange line usually juts out posteriorly; the undercurved side-margins, and below them to the sternum, orange; disk anteriorly with a few, posteriorly with more, distinct, small, black punctures; *Metanotum,* in apterous examples, with an orange spot in the centre. *Elytra* brown-black, with 4 clear white spots; the 1st long, narrow, sublinear, at the base close to the anterior margin; the 2nd oval, at the base of the 1st cell (when the elytra are closed these 2 spots are close to the sides of the scutellar process); the 3rd and 4th round, one behind the other on the middle of the elytron. *Wings* fuscous, with darker nerves. *Sternum* at the sides, with very fine, long, yellowish hairs; *Pro-* and *Mesosternum* dull, dusky yellowish, fuscous outwardly; *Metasternum* brown-black; coxal sheaths outwardly black, with a silvery gloss, inwardly yellowish-brown, the 3rd pair with the posterior margin yellowish. *Legs* black, brownish beneath, clothed with close, short pubescence; the middle *tibiæ* with a row of very fine, long, projecting black hairs; *tarsi* brown.

Abdomen above, black, with a faint orange middle line, the sides with a row of long white spots, 1 on each segment, the 1st 2 being larger than the others; underside orange, with fine, very close pubescence, each side with a row of connected, large angular spots, broadly margined interiorly with glossy silvery pubescence; *Connexivum* orange, the posterior outer angle of the 1st 5 segments with a triangular black spot, the projecting point of the 6th also black. *Genital segments* black, with very short projecting hairs.

Length, 3—3¼ lines.

The apterous form is common in small companies, on clear streams, from March to September; the winged form is rare.

Genus 2.—MICROVELIA, *Westw.*

Small, stout, oval, broadest across the hinder angles of the pronotum.

Head broad, very convex, seen from above subconical, sides subparallel, narrowly flattened; antenniferous processes very small, flat, close before the eyes; *Face* very short, vertical. *Antennæ* stout, 6-jointed, the 3rd and 5th very minute; 1st and 2nd clavate, the 1st longer than the 2nd; 4th thinnest, slightly thickened to the apex; 6th longest, long-fusiform. *Eyes* hemispherical, inserted close to the pronotum. *Ocelli* 0. *Rostrum* reaching beyond the 1st pair of coxæ, 3-jointed, 1st shortest; 2nd ½ longer than the 3rd; the 1st in a narrow channel.

Thorax.—Pronotum 5-sided, subrhomboidal, on the anterior margin broad, incrassated, with a slight transverse depression close behind it, anterior angles obtuse; sides sinuate, hinder angles produced into a long tubercle, behind them produced into an obtusely pointed, triangular process. (Where the elytra are not developed the pronotum is short, broad trapeziform, the posterior margin slightly rounded, the scutellar process not produced, leaving the metanotum exposed; the disk deflected from back to front, with a fine linear depression near and parallel to the posterior margin.) *Elytra* (very rarely developed) as long as the abdomen and the nerves, strong, forming 6 consecutive cells, of which the basal ones are small, the apical ones emitting 2 nerves. *Sternum; Pro-* and *Mesosternum* with a channel widened at the ends. *Legs* rather short and stout, in length subequal, unarmed; *coxæ* transversely, all equally distant, lengthwise the 2nd pair rather nearer to the 3rd than to the 1st; *fulcra* long; *thighs;* 3rd pair slightly stoutest; *tibiæ;* 1st pair stoutest and shortest, shorter than the thighs; 3rd pair thinnest and longest; *tarsi;* 1st pair 2-jointed, 1st joint very short, 2nd long; 2nd and 3rd pairs trimerous, 1st joint very short, 3rd longer and broader than the 2nd; the last joint of all the tarsi with 2 very fine, close claws, inserted before the end.

Abdomen above flat, beneath convex, somewhat contracted at the base; *Connexivum* rounded, deep, reflexed, the ends not projecting. *Genital segments* after the same type as *Velia.*

Species 1.—Microvelia pygmæa.

Velia pygmæa, *L. Duf.* Ann. Soc. Ent. France, ii, 115, t. 6B, fig. 1 (1833).
Microvelia — *Westw.* Ann. Soc. Ent. France, iii, 647 (1834).
Hydroëssa reticulata, *Burm.* Handb. ii, 213 (1835).
Hydrœssa pygmæa, *Curt.* B. E. xv, p. & pl. 681 (1838).
Hydroëssa — *Flor,* Rhyn. Liv. i, 749, 1 (1860); *Fieb.* Europ. Hem. 104, 1 (1861).

Undeveloped Form. Apterous. Dusky black, densely clothed with very short pile.

Head dull, with a shining white line on each side. *Antennæ* black, 1st joint fulvous on the basal half.

Thorax.—Pronotum dull; anterior margin ochreous, the colour interrupted in the middle. *Legs* black; *coxæ* and basal 3rd of the *thighs* fulvous.

Abdomen dull in the middle, sides and *Connexivum* with a shining silvery gray gloss.

Underside entirely clothed with lustrous silvery gray pile.

Developed Form. Winged.

This we have not seen, and therefore copy the following description of the developed parts. "*Elytra* white at the base, with 5 or 6 ochreous spots on the cells, 2 elongated ones towards the base, a large one on the disk bearing a longitudinal curved brown line, 2 large roundish spots above, one nearly apical, and 2 lines near the inferior margin. *Wings* yellowish-white and slightly iridescent, with 2 short brown basal nervures." (*Curtis,* l. c.)

Length, 1 line.

"Taken in a marsh near Belfast in June and September; they move on the water more slowly than *Velia,* mostly among aquatic plants; the females seem more numerous than the males, and the winged specimens are very rare" *Haliday* (*Curtis,* l. c.). Plumstead Marshes, 27th April.

Section 2.—*LIMNOBATINA.**

Family 1.—LIMNOBATIDÆ.

Genus 1.—Limnobates, *Burm.*

Long, very narrow, sublinear.

Head horizontal, subcylindrical, as long as the thorax, widened to the front as far as the base of the antennæ, the sides thence suddenly convergent, the front subtruncate, produced on each side in a very small point; *Face* very short, subquadrate, deflected; cheek-plates long, projecting in front. Antenniferous processes small, prominent. *Antennæ* very thin, filiform; 1st joint thickest, shortest, subclavate; 2nd longer than the 1st; 3rd nearly 3 times as long as the 2nd; 4th about ½ as long as the 3rd. *Eyes* large, hemispherical, prominent, but deeply set in the sides of the head rather behind the middle. *Rostrum* subsetaceous, reaching to beyond the eyes; base in a short channel; 2nd joint long; 3rd ½ the length of the 2nd.

Thorax much wider than the head, subcylindrical; *Pronotum* (pro- and mesonotum united in 1 plate) long, convex, the pronotal portion rather narrower than the mesonotal, the disk transversely depressed at their junction; the sides of each part straight, parallel; down the middle a slight linear channel; posterior margin broadly rounded. *Elytra* usually only as long as the metanotum, and posteriorly truncate, when developed not quite so long as the abdomen, narrow, linear, with 2 long nerves; the 1st close and parallel to the anterior margin, except that it touches it about the middle; the 2nd distant from the inner margin; both connected by an oblique nerve considerably beyond the middle, and another transverse one before the apex, thus forming an irregular cell. *Wings* narrow, without a fold. *Sternum; coxæ* progressively longer and more projecting outwardly; 1st pair inserted at the anterior angles of the prosternum, vertical; 2nd and 3rd posterior, oblique. *Legs* long, thin, filiform; 1st and 2nd pairs in length subequal; 3rd pair longest; *fulcra* very thin at the base, turned upwards; *tarsi* long, thin, cylindrical, in length

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subequal; 1st joint short, 2nd and 3rd long, subequal, the last with 2 short, fine claws inserted *at* the end.

Abdomen flat above, convex beneath, the sides linear in the ♂, a little curved out in the ♀; *Connexivum* reflexed, broad in the ♀.

Species 1.—LIMNOBATES STAGNORUM.

CIMEX STAGNORUM, *Lin.* F. S. 971 (1761); S. N. 732, 118 (1767); *Schrk.* F. B. ii, 96 (1801).
— ACUS, *De G.* Mém. iii, 332, 40, pl. 15, figs. 24, 25 (1773).
GERRIS STAGNORUM, *Fab.* E. S. iv, 188, 4 (1794); *Full.* Mon. Cim. 116, 4 (1807).
HYDROMETRA — *Fab.* S. R. 258, 6 (1803); *Lat.* Gen. iii, 131, 1 (1807); *Curt.* B. E. i, 32, p. & pl. 32 (1824); *Schum.* Beitr. 2, 14, t. 1, figs. 1—6 (1832); *Am. et Serv.* Hém. 400, 1 (1843).
EMESA — *Fall.* Hem. Suec. 162, 1 (1829).
LIMNOBATES — *Burm.* Handb. ii, 211, 1 (1835); *Fieb.* Europ. Hem. 103 (1861).

Black, dull.

Head sometimes brown at base and apex. *Antennæ* black, 1st and 2nd joints fulvous, except the apex. *Rostrum* black or piceous.

Thorax.—Pronotum posteriorly, and sometimes anteriorly, brownish; sides anteriorly, and disk in the middle longitudinally, with a fine silvery gray line. When the elytra are developed the disk has 2 small, lateral, rounded tubercles posteriorly. *Elytra* fuscous, with long, dull ochreous spots between the black nerves, interrupted by the oblique transverse nerve, which is bordered with fuscous black. *Sternum;* apex of the coxal sheaths broadly ochreous. *Legs* fulvous; *thighs* at the apex, *tibiæ* on the last 3rd, and *tarsi*, black.

Abdomen above, sometimes brown on the sides, irrorated with minute, shining, golden atoms, except down the middle, where is a dull black line; *Connexivum*, in the ♀, outwardly brown, the margin darker; the base of each segment with a short silvery gray line.

Length, 4½—5 lines.

Common in ponds among *Lemna*, from spring to autumn. The insects move but slowly on the surface of the water.

Div. 2.—CRYPTOCERATA.*

Sub-Div.—AQUATILIA.

SECTION 1.—*APHELOCHIRINA.*†

FAMILY 1.—APHELOCHIRIDÆ.

Genus 1.—APHELOCHEIRUS, *Westw.*

Oval, depressed.

Head deflected, seen from above (including the eyes) obtuse-triangular; from the side pyriform, tumid at the base. *Antennæ* laid under the margins of the pronotum, the 4 joints progressively longer; 1st annular; 4th fusiform, as long as the 2nd and 3rd together. *Eyes* narrow, longish-oval. *Rostrum;* 1st joint short; 2nd very long, stout at the base, and gradually less; 3rd ⅓rd the length of the 2nd; *labrum* covering the 1st joint of the labium.

Thorax.—Pronotum subtrapezoidal, hindwardly very wide; anterior margin very deeply concave, the anterior angles produced exterior to the eyes; sides slightly rounded; posterior margin slightly sinuate, the hinder angles oblique, projecting. *Scutellum* short, triangular, obtuse. *Elytra* generally undeveloped; when present, of the same coriaceous texture throughout; *Corium* (undeveloped semioval) anterior margin suddenly abbreviated at about ½ the length, prominent; *Embolium* triangular; *Membrane* nerveless. *Wings;* one lanceolate cell near the anterior margin, with 2 end nerves. *Sternum; Prosternum* depressed, the middle angularly raised; *Mesosternum* short, with a middle keel; *scapulæ* narrow, trapezoidal; *Metasternum* much depressed, hindwardly raised triangular, sides prominent, sinuate; *pleuræ* large, oblique, almost quadrangular. *Legs; coxæ* long; *thighs* stout, compressed; 1st and 2nd pairs dilated at the base; 3rd pair simple, rather longer; *tibiæ;* 1st and 2nd pairs nearly cylindrical, thickened to the apex; 3rd pair compressed, subtrigonate, finely ciliated; *tarsi;* 1st and 2nd pairs about ⅓rd the length of the tibiæ; joints in length subequal; 3rd pair more slender, rather shorter than the tibiæ; 1st joint longest; *claws* long, slender.

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Abdomen very broad; posterior angles of the 3rd, 4th, 5th, and 6th segments produced into an acute spine, on each segment larger than on the preceding one.

Species 1.—APHELOCHEIRUS ÆSTIVALIS.

NAUCORIS ÆSTIVALIS, *Fab.* E. S. iv, 66, 2 (1794); *Coqueb*, Ill. t. 10, fig. 4 (1799); *Fab.* S. R. 111, 3 (1803).

APHELOCHEIRUS ÆSTIVALIS, *Westw.* Mag. Nat. Hist. vi, 228 (1833); Introd. Mod. Class, i, frontisp. fig. 7 (1839); ii, 466 (1840).

APHELOCHIRA ÆSTIVALIS, *Fieb.* Gen. Hydr. 15, t. 1 D (1851); Europ. Hem. 103 (1861).

Broad-oval, slightly convex, smooth, dull, light brown.

Head, except the base, ochreous. *Antennæ* ochreous. *Eyes* piceous. *Rostrum* pale ochreous.

Thorax.—Pronotum; sides broadly ochreous. *Elytra: Corium*; (undeveloped) the abbreviated anterior margin broadly, posterior margin narrowly, ochreous; *Membrane* mostly wanting; according to Fieber, blackish with a lighter spot at the base. *Sternum* ochreous-brown; sides of the *prosternum* broadly ochreous. *Legs* ochreous.

Abdomen above; posterior angles of each segment with a large, subtriangular spot, and the spines, ochreous; underside ochreous-brown. *Genital segments* above and beneath, posterior margin ochreous.

Length, 4½—5 lines.

Rare. We are indebted to Professor Westwood for the loan of a specimen, and also for the following notes of captures. "Two specimens both alike (and like mine, with rudimentary hemielytra) taken by Mr. Johnson, No. 44, Rea Street, Birmingham, about 30 years ago, in a well in Sutton Park, Warwickshire, which, from the smell and the taste, is or was known to the collectors of Birmingham by the name of 'the Brimstone Well.' He thinks it is now (20 years ago) filled up. He informs me that he saw numbers of specimens (perhaps 20) swimming and diving (like *Corixa*), and not running on the bank (like *Salda*), and that he was obliged, in order to secure them, to dip the end of his fly-net into the water, having no landing-net with him."

"Mr. F. W. Hope, in damp situations, near water, in Bagley Wood, Oxon."

"In the Evenlode where it forms the mill-pool (at its north-east angle) at Eynsham Paper Mills, in June, 1832. Swims very fast, chiefly using its hind legs; creeps slowly, using its four fore-legs, J. O. W."

"My specimen from Bosc's collection, as figured in my 'Introduction,' and by Coquebert, has fully developed hemielytra and wings."

"We have it also with rudimentary hemielytra and wings in the Hope Collection, obtained from Lansdown Guilding's collection, marked 'Europa,' and stuck with a short English pin."

Section 2.—*NAUCORINA.**

Family 1.—NAUCORIDÆ.

Genus 1.—Naucoris, *Geoffr.*

Broad-oval, slightly convex.

Head transverse, from above semilunate; *Face* very short, vertical; with a fovea on each side close to the eyes. *Antennæ* short, stout; 1st joint annular; 2nd twice as long as the 1st; 3rd longest; 4th short, subfusiform, more slender than the others. *Eyes* large, subtriangular, posteriorly trenching on the pronotum. *Rostrum;* 1st joint short, broad; 2nd narrower, tapering, more than twice as long as the 1st, flattened in front, convex beneath; 3rd short, conical; *labrum* obtusely triangular, wider than the *labium*.

Thorax.—*Pronotum* subtrapezoidal; anterior margin straight between the eyes, slightly concave behind them; anterior angles advanced, and clasping the base of the eyes; sides scarcely rounded, with a distinct, narrow, linear margin. *Elytra; Clavus* with 1 nerve; *Corium* with 1 nerve continued from the embolium; posterior margin angulated; *Membrane* without nerves. *Sternum; Prosternum* very concave, the middle with a deep, wide, sharp keel; sides of the sockets of the coxæ prominent, foliaceous; posterior margin roundly produced upon each side upon the mesosternum; *Mesosternum* short, raised and obtusely triangular in the middle; *Metasternum;* the side-plates subrhomboidal, greatly raised over the posterior coxæ. *Legs* very stout; *coxæ* large, convex inwardly, concave outwardly, anterior pair slender towards the apex; *thighs*

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all grooved beneath; 1st pair short, excessively broad, ovate; 2nd and 3rd pairs compressed; *tibiæ;* 1st pair falcate, gradually narrowed to the apex, folded under the thigh when at rest, like the closed blade of a knife; 2nd and 3rd pairs somewhat thickened to the apex, the 3rd pair more distinctly angulated, but with long, stout spines, and long cilia on the inner side; *tarsi;* 1st pair very short, joined, but not articulated to the tibiæ, monomerous and without claws; 2nd and 3rd pairs long, 2-jointed, articulated, ciliated on the inner side, the last joint with 2 long claws.

Abdomen broad, oval, flattened on the sides; beneath with a broad, sloping middle keel; the 6th segment on each side, on the posterior margin, with a deep, subquadrate excision; stigmata small; *Connexivum* narrow, serrate; *Genital segments* short, covered with long hair.

Species 1.—Naucoris cimicoides.

Nepa Cimicoides, *Lin.* F. S. 245, 907 (1761); S. N. 2, 714, 6 (1767); *Schrk.* Enum. 262, 606 (1781).
— naucoris, *De G.* Mém. iii, 375, 3, pl. 19, figs. 8, 9 (1773).
Naucoris cimicoides, *Geoffr.* Ins. 1, 474, 1, t. 9, fig. 5 (1764); *Fab.* E. S. 66, 1 (1794); *Schell.* Geschl. 30, t. 12, figs. 1, 2 (1800); *Fab.* S. R. 110, 1 (1803); *Fall.* Hem. Suec. 176, 1 (1829); *L. Duf.* Rech. 79, 2 (1833); *H. Schf.* Nom. Ent. i, 63 (1835); *Burm.* Handb. ii, 193, 1 (1835); *Spin.* Ess. 53, 1 (1840); *Am. et Serv.* Hém. 433, 1 (1843); *Kolen,* Mel. Ent. vi, 64, 270 (1857); *Flor,* Rhyn. Liv. i, 753, 1 (1860); *Fieb.* Europ. Hem. 102, 1 (1861); *Panz.* F. G. 95, 16.

Yellowish or fuscous green, smooth, slightly shining; *head* and *pronotum* mostly dull yellowish, the *head* generally with 2 long spots in the middle and the base black; the *pronotum* on the sides clear, the base and middle with a wide clear light band, the disk otherwise obscured with dark confluent spots and small scattered punctures.

Head.—Crown in the middle with 2 longitudinal approximate spots and the posterior margin black. *Antennæ* virescent. *Eyes* black.

Thorax.—Pronotum; sides diaphanous, clear or with a few black punctures; close within the base a broad, clear, transverse band, joined to it in the middle a narrow longitudinal one, the disk on

each side of it with 2 dark subtrapezoidal patches formed by small, black confluent spots, and a few scattered punctures. *Scutellum* with a narrow, yellow line at the sides. *Elytra* unicolorous throughout; *Corium;* anterior margin on the basal 3rd very slightly reflexed, and narrowly pale yellowish. *Wings* white. *Sternum* yellowish, black in the middle, the sides with long, silky hairs. *Legs* greenish; *coxæ* with strong, short hairs; *thighs* with very fine, short hairs; the edges of the groove finely serrate; *tibiæ* at the end and the spines brown; cilia yellow.

Abdomen beneath dull greenish or yellowish; *Connexivum* yellowish, the posterior angle of each segment projecting in a small, acute, black spine; the entire margin with long silky hairs.

Length, 5—5½ lines.

Common in summer in ponds and ditches where many water-plants grow, swimming with rapid motion by means of the 4 hind legs.

Section 3.—*NEPINA.**

Family 1.—RANATRIDÆ.

Genus 1.—Ranatra, *Fab.*

Long, sublinear, cylindrical.

Head short, seen from the side pyriform, above convex, posterior margin rounded; *Face;* central lobe prominent, not reaching the anterior margin; side lobes wider, shorter, rounded; the face before the lobes narrowed, with 2 callosities; the sides parallel; anterior margin broad, obtuse. *Antennæ;* 1st joint annular; 2nd in length subequal, with a stout, oblique, lateral process; 3rd fusiform, stout, reaching beyond the process of the 2nd. *Eyes* large, prominent, almost semi-oval. *Rostrum* porrected, short, narrow; 1st joint greatly contracted at the base; 2nd rather longer, subcylindrical; 3rd shorter than the 2nd, conical; *labrum* rather long, slender.

Thorax.—*Pronotum* very long, narrowest in the middle, a little widened to the front, more so to the hinder angles; anterior margin roundly, posterior margin angularly, cut out. *Scutellum* small, rhomboidal. *Elytra* pergamentous, laid sloping, roof-like, to the sides, not so long as the abdomen; *Clavus* narrow; *Corium;* on the anterior margin nearly the whole length of the elytra; inner margin

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much shorter; posterior margin very oblique; nerves very fine; *Membrane* distinct, very short, posteriorly rounded, filled with very fine reticulated nerves. *Sternum; Prosternum* much shorter than the pronotum, with a sharp, thin middle keel, which ceases before the posterior margin, on each side of it a longitudinal channel for the reception of the coxæ; *Mesosternum* trapeziform, convex; *Metasternum* short, depressed, between the 2nd and 3rd pairs of coxæ raised in an oval lobe, which is longitudinally depressed in the centre, and posteriorly is produced into a short keel between the posterior coxæ. *Legs* very long, slender; 1st pair stouter than the others; *coxæ* cylindrical, about $\frac{2}{3}$rds the length of the tibiæ; *fulcra* long, curved upwards; *thighs* contracted at the base, slightly dilated as far as the anterior groove, then linear and curved outwards to the end, with a groove beneath, extending from the apex backwards for rather more than $\frac{1}{3}$rd the length of the thigh, very narrow, minutely serrated on the edges, terminated posteriorly by a large, projecting, triangular spine; *tibiæ* thin, curved, slightly thinner to the apex, in repose folded back into the groove on the thighs; *tarsi* long, curved, obtuse, without claws; 2nd and 3rd pairs of legs longer than the 1st, subequal; *coxæ* very short, stout; *thighs* cylindrical; *tibiæ* cylindrical, less than the thighs; *tarsi* very long, slender; *claws* thin, divergent.

Abdomen flat above, trigonal beneath, posterior margin of all the segments straight; *Connexivum* (except on the last 2 segments) broad, projecting laterally, reflexed; *Genital segments* posteriorly, not pointed. Spiracular filaments very long.

Species 1.—Ranatra linearis.

Nepa linearis, *Lin.* F. S. 908 (1761); S. N. 714, 7 (1767); *De G.* Mém. iii, 369, 2, pl. 19, figs. 1, 2 (1773).

Hepa — *Geoffr.* Ins. i, 480, 1, pl. 10, fig. 1 (1764).

Ranatra — *Fab.* E. S. iv, 64, 2 (1794); S. R. 109, 2 (1803); *Panz.* F. G. 95, 15; *Lat.* Hist. Nat. xii, 282, pl. 96, fig. 5 (1804); Gen. iii, 149, 1 (1807); *Lep. & Serv.* Enc. x, 267, 1, pl. 22*a*, figs. 1—10, & pl. 374, figs. 16—19 (1825); *Fall.* Hem. Suec. 169, 1 (1829); *Curt.* B. E. vi, p. & pl. 281 (1829); *Hahn.* Wanz. i, 30, t. 42, fig. 131 (1834); *Burm.* Handb. ii, 199, 1 (1835); *H. Schf.* Nom. Eat. i, 63 (1835); *Blanch.* Hist. Nat. iii, 90, pl. 1, fig. 3 (1841); *Am. et Serv.* Hem. 443, 2 (1843); *Flor,* Rhyn. Liv. i, 765, 1 (1860); *Fieb,* Europ. Hem. 102 (1861).

Yellowish-brown, smooth.

Eyes with a brown spot in the middle. *Legs* concolorous with the body, the serration of the groove on the anterior *thighs* and the inner side of the anterior *tibiæ*, black.

Abdomen above, exclusive of the connexivum, red.

Length (exclusive of spiracular filaments), 18 lines; filaments 15 lines.

Not common. In stagnant water, mostly at the bottom, as the insects swim badly. Wandsworth Common; Hammersmith Marshes.

Family 2.—NEPIDÆ.

Genus 1.—Nepa, *Lin.*

Long-oval, very flat and thin.

Head short, obtuse. *Antennæ;* 1st joint subglobose; 2nd of equal length, produced laterally at the end into a falcate process; 3rd of similar form, nearly as long, incumbent on the 2nd. *Eyes* seen from the side reniform, from above oval, convex, prominent. *Rostrum* almost vertical, conical; 1st joint annular, 2nd tumid in the middle beneath, 3rd obconic.

Thorax.—Pronotum broad, trapezoidal; anterior margin much longer than the width of the head; anterior angles broadly rounded, the middle deeply cut out for the reception of the head; disk, the 1st ⅔rds posteriorly defined by a sharp, linear, transverse incision, deepest towards the sides; the side margins narrowly, sharply defined; the middle longitudinally depressed, with a large, longitudinal callosity on each side of it, the rest of the anterior portion uneven; the posterior 3rd even, dilated, the sides incrassated, the callosity on the inner side anteriorly with a deep, rounded, foveate channel; posterior margin slightly concave. *Scutellum* large, triangular; basal angles with a long depression, but the side margins raised. *Elytra* coriaceous and reticulated throughout; *Clavus* long, irregularly triangular, with 1 raised nerve; *Corium* with 2 scarcely perceptible long nerves and very fine reticulations; *Embolium* long, parallel, indistinct on the upper side; *Membrane* short, indistinctly separated from the corium, rather thinner, irregularly reticulated. *Wings* with 4 long nerves, but not reaching the posterior margin; the 1st 3 united posteriorly, forming 2 long cells. *Sternum; Pro-*

sternum posteriorly retuse, xyphus rounded; *Meso-* and *Metasternum* transverse; the latter ⅓ the length of the former. *Legs;* 2nd pair shortest; *coxæ*; 1st pair stout, not ½ so long as the thighs; 2nd and 3rd pairs subglobose; all the *fulcra* interposed between the coxa and thigh; *thighs;* 1st pair incrassated, suddenly smaller towards the apex, with a wide groove on the underside throughout; *tibiæ;* 1st pair curved, rather shorter than the thighs, folding back into the femoral groove; *tarsi;* 1st pair digitate, without claws; 2nd and 3rd pairs longest; claws long, thin, and not divergent.

Abdomen above, flat; beneath with a depressed middle keel; the 1st and 2nd segments so anchylosed that they appear as 1, and thus there seems to be only 5 abdominal segments; on the upperside the posterior margin of each is concave, much more so on the last; on the underside it is oblique from the middle to the side margins, except in the last, where it is straight in the middle, across the base of the central genital segment, and is produced obliquely at its sides. *Genital segments* terminating with a spinose point on each side of the projecting filaments, which are not ½ the length of the body.

Species 1.—NEPA CINEREA.

NEPA CINEREA, *Lin.* F. S. 906 (1761); *Scop.* Ent. Carn. 119, 350 (1763); *Lin.* S. N. 714, 5 (1767); *De G.* Mém. iii, 361, 1, pl. 18, figs. 1—13 (1773); *Fab.* E. S. iv, 63, 7 (1794); S. R. 107, 8 (1803); *Lat.* Hist. Nat. xii, 284, pl. 95, fig. 8 (1804); Gen. iii, 148, 1 (1807); *Panz.* F. G. 95, 14; *Fall.* Hem. Suec. 170, 1 (1829); *Burm.* Handb. ii, 196, 2 (1835); *H. Schf.* Nom. Ent. i, 63 (1835); *Curt.* B. E. xv, p. & pl. 700 (1838); *Zett.* Ins. Lap. 283, 1 (1840); *Blanch,* Hist. Nat. iii, 90, 1 (1841); *Am. et Serv.* Hém. 440, 3 (1843); *H. Schf.* Wanz. viii, 21, t. 255, fig. 796 (1845); *Flor,* Rhyn. Liv. i, 762, 1 (1860); *Fieb.* Europ. Hem. 102 (1861).

Dull, earth-brown.

Head, Pronotum, Scutellum, and outer sides of *Elytra,* granulated. *Wings* pale gray, nerves red or yellowish. *Legs;* 2nd and 3rd pairs, *thighs* with the base and 1 or 2 indistinct spots, dingy ochreous; *tibiæ* with an indistinct ochreous ring near the base.

Abdomen above black, sides and margins of the segments carmine; *Genital segments* and spiracular filaments brown; underside dull ochreous, mottled with brown or red.

Length (exclusive of spiracular filaments), 7—10 lines; filaments 4 lines.

Common in and on the mud of stagnant water, throughout the year.

Section 4.—*NOTONECTINA.**

Family 1.—NOTONECTIDÆ.

Genus 1.—Notonecta, *Lin.*

Long-oval, semi-cylindrical; membrane of the elytra folded longitudinally, saddle-formed.

Head transverse, including the eyes almost reniform, rounded in front and curved completely under. *Antennæ* short; 1st joint short, stout, truncate-conic; 2nd stout, subcylindrical, constricted at the base; 3rd narrower, nearly as long as the 2nd, thickened on one side, with prominent, fine, capitate hairs; 4th short, thin, conical. *Eyes* very large, long-triangular, curved with the head, posteriorly broadest, viewed from above set obliquely, the interior part of the base of each set forward and approximating to the other, their posterior margin trenching on the anterior angles of the pronotum. *Rostrum* reaching to the mesosternum, stout, curved, conical; 1st joint short, covered by the labrum; 2nd shorter than the 1st, constricted at the base, with a tuft of hairs on each side; 3rd as long as the 1st and 2nd together; 4th conic, as long as the 2nd; *labrum* large, triangular, pointed.

Thorax.—Pronotum convex, irregularly 6-sided; anterior margin a little shorter than the breadth of the head, including the eyes; sides long, divergent; hinder sides short, merging into the posterior margin, which is slightly concave. *Scutellum* convex, long, triangular, with a long point, the posterior ½ sunk into the metanotum; *Metanotum* long. *Elytra; Clavus* long, trigonal, the sutural side longest; *Corium;* anterior margin at the base very narrowly reflexed, posteriorly sinuate; posterior margin indicated by an oblique raised line extending from the inner margin but not reaching the anterior margin; the *Membrane* beyond this, but exterior to the longitudinal fold, at first of the same substance as the corium, then gradually thinner, interior to the fold it is entirely thinner, with a distinct, narrow, flattened margin; the apex with a deep angular notch on

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the fold; *Embolium* narrow, nearly as long as the corium. *Wings* very delicate, the nerves forming 4 cells, the 1st 2 near the anterior margin, one before the other, between the 1st and 2nd nerves, which project a little beyond the 2nd cell; the 3rd and 4th long, subparallel, the 2nd emitting a short nerve at the end. *Sternum* long, with large cavities for the coxæ; the sides densely clothed with long appressed hairs; *Prosternum* short, sides deflected; *Mesosternum* oblong, subparallel, xyphus subcordate; *Metasternum* in length and form similar to the mesosternum. *Legs; coxæ* large, 1st and 2nd pairs inwardly concave, 3rd pair cylindrical, horizontal; *fulcra* large, the 2nd pair fitted into the base of the thighs; *thighs;* 1st and 2nd pairs broad at the base, gradually less downwards, the 2nd beneath, with a strong spine before the apex; 3rd pair long-fusiform, thinner, compressed, the underside with a channel throughout; *tibiæ*; 1st and 2nd pairs compressed, broad, narrowed at the base; subtrigonate, curved, beneath with a longitudinal channel; 3rd pair thinner, longer, ciliated within; *tarsi* 2-jointed; 1st joint more than twice as long as the 2nd; 1st and 2nd pairs stout, rounded above, flat beneath; 3rd pair slender, nearly as long as the tibia, ciliated within; *claws;* 2 on each tarsus, on the last pair very short.

Abdomen long oval; above, the basal segments convex, the posterior compressed, angulated; beneath raised angularly in the middle into a keel which is ciliated, the sides sloping into a deep groove within the connexivum, which, narrow above, is broad and flat beneath, and internally fringed with long hairs. The 1st segment, beneath, is anchylosed with the 2nd, but above is distinctly visible; the 4th segment in both sexes, on its posterior margin, is deeply, angularly excised, and in the ♂ the last 2 segments also, but in a less degree; in the ♀ the last 2 segments are straight. *Genital segments* in ♂ and ♀ outwardly much alike. In the ♀ the 2nd is the largest, it follows the last abdominal segment, and is formed like it; it consists of 4 connected pieces—1 upper, 1 under, and 2 lateral. The under plate is large, long, hindwardly pointed, nearly triangular, separated from the side plates by a deep incision, reaching almost to its base, and is thus slightly movable. The convex upper plate is broadly excised on its hinder margin, and here, only on the upper side, is seen the 3rd segment, consisting of 1 thin convex plate, deeply, angularly excised on its posterior margin; on the underside it appears as 2 stout, horny, almost triangular plates, whose inner angles meet in the centre, which is covered by the under plates of the 2nd segment. On the inner angle of the plates

of the 3rd segment the 1st segment appears as 2 narrow plates, directed upward and backward, and at the sides 2 long anal appendages. In the ♂, the 1st segment is placed and formed like the 2nd in the ♀, except that the under plate is not pointed, but shorter and broadly obtuse; over it lies the triangular point of the under plate of the 2nd segment, with which it forms a large triangle. Above, the posterior margin is concave and irregularly dentate, and in the excision the upper and side plates of the 2nd segment are visible, the rest of the segment is covered by the 1st, and the 3rd by the 2nd; the apex curved and cleft, and beneath, a thin, movable, horny style.

The *Notonectæ* swim very rapidly, with the back downwards, using their hind legs like oars, whence their name of "Boat-flies." Their rostrum is capable of inflicting a painful wound in the hands of those who take hold of them without due care.

Species 1.—Notonecta glauca.

Notonecta glauca, *Lin.* F. S. 903 (1761); *Scop.* Ent. Carn. 118, 348 (1763); *Lin.* S. N. 712, 1 (1767); *De G.* Mém. iii, 382, 5, t. 18, figs. 16, 17 (1773); *Panz.* F. G. 3, 20; *Fab.* E. S. iv, 57, 1 (1794); S. R. 102, 1 (1803); *Lat.* Hist. Nat. xii, 291, pl. 97, fig. 41 (1804); Gen. iii, 150, 1 (1807); *Leach*, Trans. Lin. Soc. xii, 13, 3 (1817); *Fall.* Hem. Succ. 177, 1 (1829); *L. Duf.* Rech. 88, 1 (1833); *Burm.* Handb. ii, 190, 1 (1835); *Blanch.* Hist. Nat. iii, 88, 1, pl. 1, fig. 2 (1840); *Am. et Serv.* Hém. 452, 1 (1843); *Flor*, Rhyn. Liv. i, 772, 1 (1860).

— furcata, *Fab.* E. S. 58, 2 (1794); S. R. 102, 2 (1803); *Leach*, Trans. Lin. Soc. xii, 12, 1 (1817); *Fall.* Hem. Succ. 178, 2 (1829).

— Fabrici, p. *Fieb.* Rhyncot. 49, 3 (1851); Europ. Hem. 101, 2 (1861).

Elytra cinereous or ochraceous, with a row of subquadrate brown spots close to the anterior margin; or black-brown, with a long ochreous dash on the *clavus* and *corium*. *Abdomen* black; *membrane;* the points projecting on each side of the apical notch of equal length and breadth.

Head yellowish-cinereous, shining. *Eyes* dark brown. *Rostrum* cinereous, last joint black.

Thorax. — *Pronotum* shining, yellowish-cinereous, posteriorly greenish fuscous. *Scutellum* black, dull. *Elytra; Clavus* and *Corium* dull, cinereous or ochraceous; *Clavus* with a brown spot at the apex; *Corium;* anterior margin clear, but immediately within it a row of subquadrate brown spots, often confluent; *Membrane;* external ⅓ ochreous and dull at the base, more or less brown next the fold, apical portion fuscous, darkest outwardly; inner ⅔ cinereous or pale fuscous, darker outwardly, slightly shining; the well-defined margin of both halves pale, shining (*N. glauca*):—or, *Clavus* ochreous, except a brown-black dash close and parallel to the posterior margin, which is narrowly ochreous; *Corium* black-brown, sometimes with a posterior ferruginous spot; anterior margin narrowly, disk with a dash in the middle gradually widening from the base to beyond the centre, and then ceasing abruptly, ochreous; *Membrane;* external ⅓ at the base concolorous with the corium, dull, the rest of it and the whole of the inner ⅔ smoke-brown, slightly shining; margin unicolorous (*N. furcata*). *Metanotum* black. *Wings* hyaline; nerves of the 2 anterior cells brown. *Sternum* black, the sides with close yellow hairs. *Legs* greenish-ochreous or ochreous; *tibiæ* outwardly with 2 rows of very short black spines.

Abdomen above, black; apical segments greenish at the sides; underside black, central keel and sides with yellowish hairs; *Connexivum* above and beneath dull ochreous, the junctions of the segments brown.

Length, 7—8 lines.

N. furcata, Fab., is considered by Fieber, Burmeister, Herrich-Schäffer, and Flor, to be a *var.* of *N. glauca,* Lin., but, though we defer provisionally to their opinion, we think the matter has yet to be proved by out-door observers. *N. marmorea,* Fab., a form which does not, as far as we are aware, occur in Britain, is also quoted by these authors as a *var.* of *glauca.*

Species 2.—NOTONECTA MACULATA.

NOTONECTA MACULATA, *Fab.* E. S. iv, 58, 3 (1794); S. R. 103, 4 (1803); *Leach,* Trans. Lin. Soc. xii, 12, 2 (1817); *Curt.* B. E. i, p. & pl. 10 (1824).

Elytra ferruginous, spotted with black-brown; *abdomen* above, orange, with a large black spot.

Head yellowish-cinereous, shining. *Eyes* pale brown, with indistinct darker spots. *Rostrum* cinereous, last joint black.

Thorax. — *Pronotum* shining, yellowish-cinereous, posteriorly greenish fuscous. *Scutellum* black, dull. *Elytra; Clavus* ferruginous, dull, with dark-brown confluent spots, posteriorly entirely dark brown, the inner side, as far as the posterior angle, clear, the ground colour gradually narrower from the base to that point; *Corium* ferruginous, with dark-brown, irregular, confluent spots (like the clavus), which posteriorly obscure the ground colour entirely; anterior margin pale throughout; *Membrane* at the base ferruginous with brown lines, the colour then, to about ½ the length, on the part exterior to the fold, dark brown, opaque, the colour ending roundly and abruptly; the remainder of the outer part pale brownish, shining, semi-transparent; the part interior to the fold also pale brown, shining, semi-transparent, unspotted, except the base, which has a ferruginous spot bordered with brown; inner margin brown; the parts on each side of the fold of equal breadth and length. *Metanotum* orange, with a large black spot opposite the middle of the sides of the scutellum. *Wings* hyaline, iridescent; nerves of the 2 anterior cells brown. *Sternum* black, clothed with yellow hairs, very densely on the sides. *Legs* greenish-yellow.

Abdomen above, orange, with a large black spot in the middle, reaching about ½ the length but not extending to the sides; apex on each side greenish; underside black, of the *Connexivum* orange, the junction of its segments brown; ciliation of the middle keel and sides yellow.

Length, 7—8 lines.

Western counties of England (*Dale*).

Fabricius' description of *N. maculata* agrees with our insect, except that he has "Scutellum album," which probably, as H. Schäffer says, is in error for "atrum." Fieber does not quote the name. Flor enumerates it as a variety of *N. glauca*. Herrich-Schäffer (Wanz., viii, t. 197) merely copies Curtis's figure, and thinks the insect is only a *var.* of *N. glauca* (*N. marmorea*, Fab.), and not *N. maculata*, Fab. Fieber's var. β of *N. Fabrici* (*umbrina*) agrees in some respects, but he says: "Der ganze Rucken okergelb, Schienen mit grossen dreieckigen schwarzlichen Flecken, die zuweilen verfliessen" (Rhyncotograph. p. 50). But whatever the true name of our insect, we deem it to be a distinct species. Mr. Dale, by whom only, as far as we know, it has been taken, says: "Some varieties of *N. glauca*, with the wings closed, do not show any

great variation from *N. maculata;* but when expanded, the latter (in all examples I have seen) shows a reddish colour on the body, which I never saw in *glauca* or *furcata*, and I have never seen one I could not at once decide on."

Family 2.—PLEIDÆ.

Genus 1.—Plea, *Leach.*

Ovate, very convex longitudinally, posteriorly compressed laterally; the whole upper surface covered with punctures, and appressed intermediate hairs.

Head scutellate, large, convex, curved under in front, slightly wider across the eyes than the front of the pronotum; viewed from the front, including the eyes, triangular. *Antennæ* 4-jointed; 1st joint curved; 2nd subcylindrical, both very short; 3rd broad, fusiform, twice as long as the 2nd; 4th small, clavate, inserted obliquely below the apex of the 3rd; the 2nd and 3rd internally, the 4th towards the apex, pilose. *Eyes* remote, subtriangular, flat-convex, slightly prominent, trenching on the anterior angles of the pronotum. *Rostrum* short, 1st joint annular, nearly covered by the labrum and the cheeks; 2nd and 3rd obconic, 3rd shortest.

Thorax.—Pronotum convex, transverse, obscurely hexagonal, hinder sides long; posterior margin, across the scutellum, slightly sinuate. *Scutellum* large, triangular. *Elytra* subrhomboidal, apex entire; *Clavus* broad, with parallel sides; *Corium;* anterior margin narrow, linear, inwardly with a parallel depressed line; the posterior margin of each elytron meeting in a straight longitudinal line; *Embolium* small, linear, on the anterior angle of the corium; *Membrane* wanting. *Wings* ample, laid in several folds, with 1 cell at the base, near the anterior margin. *Sternum;* the deep sockets of the coxæ only separated from each other by thin, vertical plates, the segments otherwise only visible at the sides as triangular plates. *Legs;* all of like form, 3rd pair longest; *coxæ* large; *fulcra;* 3rd pair stout, elongated, and angularly bent; *thighs* reversed-clavate; *tibiæ* almost trigonal, 3rd pair finely ciliated; *tarsi*, 3rd pair longest; 1st joint very short, 2nd and 3rd subequal, except in the 3rd pair, where the 3rd is longest; *claws* stout, short.

Abdomen beneath with a middle row of small spines. The *Genital segments* appear to follow the same type as in *Notonecta*.

Like *Notonecta*, *Plea* swims with the back downwards.

Species 1.—Plea minutissima.

Notonecta minutissima,		*Fab.* E. S. iv, 59, 6 (1794); S. R. 140, 10 (1803); *Oliv.* Enc. viii, 389, 12 (1789); *Lat.* Gen. iii, 150 (1807).
Plea	—	*Leach*, Trans. Lin. Soc. xii, 14, 1 (1817); *Fieb.* Europ. Hem. 101 (1861).
Ploa	—	(*Steph.*) *Burm.* Handb. ii, 189, 1 (1835); *Am. et Serv.* Hém. 449, 1 (1843); *Fieb.* Ent. Mon. 17, 1, t. 1, figs. 27—35 (1844).

Cinereous-gray clouded with brown, varying in depth of colour, slightly shining.

Head ochreous, punctured, with a smooth, brown, longitudinal line in the middle. *Eyes* brown. *Rostrum* ochreous, last joint black.

Thorax.—Pronotum anteriorly ochreous, punctures large, the intervals reticulated. *Scutellum* brown, smooth, the sides finely crenate. *Elytra; Clavus* and *Corium* more or less clouded with brown, covered with round black or brown punctures; *Corium;* base and 1 or 2 undefined spots on the disk pale, the impressed line within the anterior margin brown. *Legs* ochreous, base of the *thighs* sometimes dusky; apex of thighs, *tibiæ*, and *tarsi*, piceous; *claws* black.

Abdomen beneath pitchy black, clothed with close appressed hairs.

Length, ¾—1¼ line.

Common amongst the vegetation in stagnant water, in spring and autumn.

Section 5.—*CORIXINA.**

Family 1.—CORIXIDÆ.

Genus 1.—Corixa, *Geoffr.*

Long-oval, subparallel, convex above, smooth and usually shining.

Head transverse, scutellate, including the eyes scarcely wider than the pronotum; *Crown* imperceptibly separated from the face, convex, vertical in front; *Face;* in the ♂ flat or concave, in the ♀ generally convex. *Antennæ* concealed, subocular, very short,

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4-jointed; 1st and 2nd joints short, cylindrical; 3rd long-clavate or fusiform; 4th shorter and narrower than the 3rd, subulate. *Eyes* large, triangular, remote, the inner margins parallel, the posterior margin reaching the base of the head. *Rostrum* smooth; *labrum* transversely wrinkled.

Thorax.—Pronotum triangular, broader than long; sometimes with a slight, short, raised, longitudinal middle line, and always with fine dark and pale transverse lines. *Scutellum* concealed. *Elytra* transversely convex; *Clavus* and *Corium* mostly rastrate;* *Clavus* at its base with a small, triangular, dull piece (seen only when the elytra are expanded); *Corium;* the anterior margin throughout formed into a dull-coloured, broad, deep, parallel, subvertical, rounded channel, posteriorly narrow and shallow, the basal ½ occupied by the *Embolium,* the inner margin strongly defined for ⅔rds of its length; *Membrane* imperceptibly separated from the corium, bent obliquely over the abdomen; with only 1 scarcely visible nerve near and parallel to the inner margin. *Sternum; Prosternum* short, laterally bilobed, the lobes narrow or quadrangular; *Mesosternum* oblong, trapeziform, anteriorly deeply, angularly excised; posteriorly narrow subtruncate; *scapulæ* trapezoidal; *Metasternum* trapeziform, produced into a triangular xyphus; *pleuræ* trapezoidal; *parapleuræ* free, oblong, attached to the pleuræ. *Legs;* 1st pair shortest, stout; *coxæ* oblong, rather shorter than the thighs; *thighs* short, stout, subcylindrical, compressed; *tibiæ* very short, subclavate; *tarsi* monomerous, scoop-formed, cultrate seen sideways (*Palæ*, Fieb.), characteristically modified in the ♂ of the different species, longer and broader than the tibiæ and articulated thereto, each edge with long cilia:—2nd pair longest and thinnest, finely ciliated; *coxæ* subglobose; *thighs* simple, very long, slender, subcylindrical or flattened; *tibiæ* not ½ the length of the thighs, small, cylindrical; *tarsi* monomerous,† rather shorter and thinner than the tibiæ; *claws* 2, very long and thin:—3rd pair long; *coxæ* horizontal, large, ovate, depressed, with a flange on the inner side, deeply notched at the apex where the thighs are joined; *thighs* broad, dilated, with a few hairs on the apical end of the inner edge; *tibiæ* broad, flattened, with strong spinose hairs on each side and longer fine hairs on the inner side; *tarsi* longer than the tibiæ, flat,

* With fine, short, impressed, longitudinal striæ, like the marks of a rake on sand. (*Fieb.*)

† Fieber (*Europ. Hem.*) says 2-jointed.

dilated; both sides with long cilia and strong spinose hairs, the 1st joint 2 or 3 times longer than the 2nd.

Abdomen flat above, convex beneath; in the ♂, the last 4 segments irregular, unsymmetrical both above and beneath; in the ♀ all regular, the posterior margin of the 6th concave above, produced in a slight angle beneath; *connexivum* reflexed, gradually widened to the apex.

Upper surface glossy, not rastrate, punctured.—Spec. 1—3.
Upper surface shining, *pronotum* and *clavus* rastrate.—Spec. 4—6.
Upper surface shining or dull, *pronotum*, *clavus*, and *corium* rastrate.—Spec. 7—18.

Species 1.—Corixa Geoffroyi.

Sigara striata, *Fab.* E. S. iv, 60, 2 (1794); S. R. 104, 2 (1803); non *Lin.*
Corixa Geoffroyi, *Leach*, Trans. Lin. Soc. xii, 17, 7 (1817); *Zett.* Ins. Lap. 284, 1 (1840); *H. Schf.* Wanz. ix, 52 & 62, t. 296, fig. 914 (1850).
— striata, *Fall.* Hem. Suec. 181, 1 (1829); *L. Duf.* Rech. 84, 1 (1833).
— punctata, *Burm.* Handb. ii, 186, 1 (1835).
Corisa Geoffroyi, *Am. et Serv.* Hém. 447, 1 (1843); *Fieb.* Spec. Coris. 14, 1, t. 1, fig. 1, palæ (1851); *Walleng.* Oefv. xi, 142, 1 (1855); *Fieb.* Europ. Hem. 90, 3 (1861).
— (Corisa) Geoffroyi, *Flor*, Rhyn. Liv. i, 786, 1 (1860).

Fuscous-black. *Pronotum* with 16 or more, irregular, interrupted, fine, transverse yellow lines.

Head yellow; *Crown* usually more or less brown, the colour forwards merging into the pale yellow of the face. *Eyes* black. *Rostrum; labrum* brown.

Thorax.—Pronotum with 16 or more, irregular, interrupted, very fine, transverse yellow lines. *Elytra* with distant, fine, long, subdepressed, yellowish hairs; very fine, scarcely perceptible, distant

punctures; and many close, narrow, short, angulated, or twisted yellow streaks, somewhat transverse but not forming lines, rather stronger at the base of the clavus, but otherwise alike on it, the corium and membrane; *Embolium* dull pale livid whitish, the marginal channel beyond it inwardly darker livid, outwardly with black and yellow streaks. *Sternum* yellow, black in the middle. *Legs* brown-yellow or yellow; 1st pair, *tibiæ*, in the ♂, with a stout spine outwardly at the apex; *palæ*, cultrate, in the ♂, gradually a little widened from the base, the apex broad, obtuse, suddenly rounded from above; in the ♀ curved scarcely widened beyond the base and gradually rounded to a point; 2nd pair, *thighs*, in the ♂, a little widened posteriorly, finely dentate beneath near the apex; *tibiæ*, in the ♂, on the inner side at the base with a very narrow, thin enlargement; 3rd pair, cilia black.

Abdomen above black, yellow on the sides; underside yellow, the first 2 or 3 segments black in the middle.

Length, 5½ lines.

Common in stagnant waters in spring and autumn.

Species 2.—Corixa Panzeri.

Sigara striata, *Panz.* F. G. 50, 23, non *Lin.*

Corisa Panzeri, *Fieb.* Spec. Coris. 15, 3, *t.* 1, fig. 3, palæ (1851); Europ. Hem. 92, 7 (1861).

Fuscous-black. *Pronotum* with 12—13 fine transverse yellow lines, the first 4 or 5 mostly entire.

Head pale yellow; *Crown* at the base blackish; *Face;* towards the sides with a few long subprominent hairs; in the ♂ with a large oval depression, the broadest part occupying the whole space between the eyes. *Eyes* black.

Thorax.—Pronotum with 12—13 fine, transverse yellow lines, the first 4 or 5 mostly entire, the rest irregular and interrupted; posterior margin very narrowly yellow. *Elytra* with fine, undulating, angulated, interrupted, transverse yellow streaks, in places slightly narrower, so that the elytra appear shaded; the streaks on the base of the clavus distinctly broader, on the inner and posterior margins of the membrane directly transverse; *Clavus* and corium almost imperceptibly punctured; *Corium* with very fine, long, distant, subappressed, yellowish hairs; anterior marginal channel livid whitish

to the end of the embolium, beyond that livid gray inwardly and black spotted outwardly; anterior margin from the end of the embolium to the apex narrowly black. *Sternum* pale yellow, black in the middle; xyphus yellowish. *Legs* yellow; 1st pair, *palæ* cultrate; in the ♂ broad, curved on the upper side, somewhat suddenly rounded from above at the end; in the ♀ much narrower and more gradually pointed; 3rd pair, cilia black.

Abdomen pale yellow, base fuscous.

Scarce. In brackish water in ditches at Gravesend, April.

Species 3.—CORIXA AFFINIS.

CORIXA AFFINIS, *Leach*, Trans. Lin. Soc. xii, 18, 8 (1817).
CORISA ATOMARIA, (*Illig.*) *Fieb.* Spec. Coris. 15, 4, t. 1, fig. 5, palæ (1851); Europ. Hem. 92, 8 (1861).

Fuscous black. *Pronotum* with 13—14 fine, transverse yellow lines, abbreviated and confluent in places.

Head pale yellow; *face* in the ♂ with the depression reaching to between the eyes. *Eyes* black.

Thorax.—Pronotum with 13—14 fine, almost straight, transverse yellow lines, abbreviated and confluent in places; side angles yellowish; posterior margin narrowly brown, with fine, short, black streaks jutting out from it and joining the end of the transverse black lines. *Elytra* with undulating, angulated, interrupted, transverse yellow lines, in places narrower, so that the elytra appear slightly shaded; the lines on the base of the clavus straighter and broader than on the disk, on the inner and posterior margins of the membrane parallel and directly transverse. *Clavus* and *Corium* almost imperceptibly punctured; *Corium* with distant, very fine, long, subprominent yellowish hairs; anterior marginal channel dull, yellowish-white, base of the *Embolium* with a black middle line, beyond the embolium black shaded into livid posteriorly, anterior margin black from the end of the embolium to the apex of the elytron. *Sternum* yellow, black in the middle, xyphus black at the base. *Legs* deep yellow; 1st pair, *palæ*, in the ♂, broad cultrate, in front widened and rounded, somewhat truncate; in the ♀ broad lunate; 3rd pair, *tibiæ* and *tarsi* browner than the thighs, cilia black.

Abdomen above black, with yellowish spots at the sides; *Connexivum* with 3 or 4 black spots. Underside in the ♂ yellow, the first 3 or 4 segments and 3 posterior marginal spots, black; in the ♀ pale yellowish, the base black.

Length, 4 lines.

Scarce. In brackish water in ditches at Gravesend, April; near Plymouth (*Leach*).

Very like *C. Panzeri*, but smaller, and different in the marking of the pronotum, and the form of the palæ.

Species 4.—CORIXA LUGUBRIS.

CORISA LUGUBRIS, *Fieb.* Syn. Coris. No. 6 (1848); Spec. Coris. 18, 10, t. 1, fig. 10, pala ♂ (1851); Europ. Hem. 92, 9 (1861).

Above brown-black, with pale yellow, transverse lines, shining. *Pronotum* with 7 black and yellow alternate, narrow, irregular, interrupted lines. *Elytra* with short, narrow, twisted and angulated yellow lines, with a longitudinal black line near the inner margin, and at the posterior inner angle. *Palæ* of the ♂ semioval, pointed. Rastration very fine, obsolete on the corium.

Head obtusely angulated behind, yellow, or brown, and paler on the face; the frontal depression, in the ♂ slight, narrow, reaching upwards to the eyes.

Thorax.—Pronotum short, apex rounded, with pale yellow and black, narrow, irregular, interrupted lines; side margins yellowish-brown; longitudinal middle line barely perceptible. *Elytra* with short, close, narrow, twisted angulated yellow lines; on the base of the *Clavus* 2 or 3 are very broad, with correspondingly narrow black intervals; on the *Corium* the lines are more parallel, the black ones for the most part do not reach the inner margin of the anterior channel, and their ends are often confluent; near the inner margin a longitudinal, sinuous, black streak traverses the lines except on the basal 3rd of the disk, and the posterior inner angle is black; anterior marginal channel white, posteriorly with a longish black spot not extending to the apex; inner margin blackish; line of the membrane-suture pale yellow, followed by a black line; *Mem-*

brane with markings like those on the corium, but less transverse, on the inner margin furcate; margins black, pale on the edge. *Sternum* black; xyphus black or livid; side lobes whitish-yellow. *Legs* pale yellow; 1st pair, ♂, *thighs* thick, widened outwardly; *palæ* semi-oval, pointed, at the base beneath broader than the tibiæ; ♀, cultrate, pointed, above much and regularly convex, base scarcely wider than the tibiæ; 2nd pair, *tarsi* black at the apex; 3rd pair, *tibiæ* dusky, *tarsi* black, the 1st joint indistinctly paler on the sides.

Abdomen above and beneath black; *Connexivum* pale-yellowish.

Length, 2½—2¾ lines.

Not rare in the Cambridge Fens (*G. R. Crotch*).

Species 5.—Corixa Stål.

Corisa Stål, *Fieb.* Verhandl. k. k. zool. bot. Gesel. (1865.)

Black, with close, yellowish-white markings, shining. *Pronotum* short, finely rastrate, with 7 pale-yellow lines. *Clavus* very finely rastrate, with transverse yellow lines, at the base 4 or 5 very broad, unequal, the rest paler, narrow, irregular; *Corium* very finely punctured, the lines short, twisted, hieroglyphic, intersected by 3 black lines. *Palæ* of the ♂ long-semi-cordate.

Head yellow; *Crown* posteriorly somewhat raised, and on the posterior margin produced in a small, obtuse angle; *Face;* in the ♂ flattened, the depression slight, somewhat equally flat throughout, reaching upwards between the lower angles of the eyes.

Thorax.—Pronotum not prolonged, finely rastrate, the longitudinal middle line somewhat distinctly raised in front; with 7 equal, yellowish-white lines, the 2 middle ones generally united in 1 before their ends; side margins narrowly yellowish-brown. *Elytra; Clavus* very finely rastrate; at the base with 4 or 5 very broad, irregular, or broken yellow lines, and correspondingly narrow, intermediate black ones; the remainder with short, narrow, twisted, hieroglyphic yellow lines; *Corium* with close, short, narrow, twisted, somewhat transverse yellow lines, divided into 3 or 4 sets by 3 longitudinal black lines, one just before the edge of the anterior channel, one near the inner margin, and one less perceptible between them; an-

terior marginal channel dull yellowish-white, with a longish black spot posteriorly, not extending to the apex; inner posterior angle black, the colour extending ⅓rd along the membrane-suture, the rest of which is narrowly pale yellow, followed by a black line; *Membrane* with yellow markings similar to those on the clavus and corium; margins brown, pale on the edge. *Sternum* black, side lobes pale yellow; *Prosternum;* lobes with parallel sides; *Metasternum;* xyphus short, equilaterally triangular, depressed, black. *Legs* pale yellow, except the coxæ which are black, yellowish at the ends: 1st pair, *thighs* with a callosity in the middle; *palæ;* in the ♂ long-semicordate, suddenly and greatly convex from the base on the upper side for about ⅓rd the length, then going straight to the obtuse apex; underside straight; in the ♀ cultrate, not widened at the base, slightly curved on the upper side to the apex; 2nd pair, *tibiæ* brownish at the end; *tarsi* distinctly black at the end; 3rd pair darker yellow; *tibiæ* brown on the inner edges; *tarsi;* 1st joint in the middle, 2nd entirely, black.

Abdomen; in the ♂, above and beneath black, sides narrowly dusky yellowish; *Genital segments* brown posteriorly; in the ♀ above black, sides and *Connexivum* whitish-yellow; beneath whitish-yellow, the 1st 2 or 3 segments black in the middle; *Genital segments* blackish.

"By the *palæ* allied to *C. Mayri,* Fieb., by the marking of the corium to *C. Fieberi,* Walleng., but the latter has the line of the membrane-suture broad and clear, different palæ, yellow xyphus, &c." (*Fieber* in litt.).

Length, $2\frac{1}{2}$—$2\frac{3}{4}$ lines.

Not scarce in brackish water in ditches at Gravesend in April and May.

Species 6.—CORIXA HIEROGLYPHICA.

CORIXA HIEROGLYPHICA, *L. Duf.* Rech. 86, 2, figs. 85—87 (1833).
— — *Burm.* Handb. ii, 188, 3, excl. syn. (1835).
CORISA — *Fieb.* Syn. Coris. No. 8 (1848); Spec. Coris. 22, 19, t. 1, fig. 20, palæ (1851); Europ. Hem. 93, 13 (1861).

Above yellowish-gray, with fine, black, transverse markings, shining.

Pronotum with 7—9 fine black lines. *Clavus* and *corium* with

very fine, close, irregular, broken, jagged streaks or lines, forming on the corium by their contact 3 longitudinal lines; *clavus* at the base inwardly clear; *membrane* with fine, irregular, black reticulation. *Palæ*, in the ♂ broad-cultrate, above convex, in front rounded; base, on the underside, a little widened.

Head brown; *Crown;* in the ♂, angularly prominent posteriorly; *Face* paler, the depression elliptic, reaching upwards a little beyond the lower angles of the eyes.

Thorax.—Pronotum with 7—9 fine black lines, sometimes shortened in the middle; sides gently rounded, apex obtuse, almost rounded; the longitudinal middle line sometimes visible as a short, slight keel in front. *Elytra: Clavus;* at the base inwardly clear of markings, the remainder with fine, close, black, irregular, confluent lines, short and parallel on the inner margin; *Corium* with very fine, close, broken, angulated, subparallel, black lines, forming on the disk by their points of contact 3 longitudinal streaks; anterior marginal channel and to the apex of the corium pale yellowish or whitish-gray, the inner edge brown; posteriorly 4 or 5 dusky spots; line of the membrane-suture distinct, pale, without a black line joined to it; *Membrane* with fine, irregular, subreticulate streaks, radiating and parallel on the margins; anterior margin brown, the others pale. *Sternum* black in the middle, sides and xyphus pale yellow. *Legs* pale yellow; 1st pair, *palæ*, in the ♂, broad-cultrate, above convex, in front rounded, base on the underside a little widened, lower margin straight; in the ♀ narrower, more parallel, apex obliquely, roundly pointed, base not widened; 2nd pair, *tarsi* brownish at the apex; 3rd pair, *tarsi*, 1st joint with a fine, brown line down the middle, 2nd black.

Abdomen above black, *Connexivum* pale; underside pale yellow; in the ♂, the 1st 3 or 4, in the ♀, the base and sometimes 3 or 4 spots on the sides, black.

Length, 2⅓—2⅔ lines.

Two specimens from the Cambridge Fens (*G. R. Crotch*).

Species 7.—Corixa Sahlbergi.

Corixa striata, *Sahlb.* Not Fen. 9, 1 (1819), excl. syn.
— Geoffroyi, *Stoll*, Pun. t. 15, fig. 13 b, et t. 32, fig. 15 c (1788).
Corisa Sahlbergii, *Fieb.* Syn. Coris. No. 10 (1848); Spec. Coris. 25, 24, t. 2, fig. 3, palæ (1851).
— Sahlbergi, *Walleng.* Oefv. xi, 144, 5 (1855); *Fieb.* Europ. Hem. 94, 16 (1861).
— (Corisa) Sahlbergii, *Flor*, Rhyn. Liv. i, 790, 4 (1860).

Above fuscous-black, dull. *Pronotum* elongate, with 8 transverse pale lines. *Clavus* and *corium* with fine, parallel, undulating, pale lines; apex of the corium pale, clear of markings; line of the membrane-suture pale, distinct.

Head yellow; *Crown* brown; *Face;* in the ♂ the depression slight, obovate, reaching upwards a little beyond the lower angles of the eyes.

Thorax.—Pronotum elongate, posteriorly angulated, with 8 (rarely 9) fine, pale-yellow, entire, transverse lines; the longitudinal middle line a little raised in front; side margins brownish. *Elytra; Clavus* and *Corium* with fine, yellowish, somewhat distant, parallel, mostly entire lines (some rarely furcate at the claval suture) slightly undulating, except at the base of the clavus; *Corium;* anterior marginal channel livid yellowish, apex dull yellowish, clear of markings; claval suture dark; line of the membrane-suture distinct, pale yellowish, followed by a dark line or shade; *Membrane* shining, with broader, more undulating and angular lines than those on the corium, on the disk interrupted, on the inner margin short and straight; posterior margin broadly fuscous-brown. *Sternum* black; *Prosternum;* lobes yellow; *Mesosternum; Scapulæ* outwardly pale or livid yellow, at the base black; *Metasternum;* xyphus yellow, or the base black; *pleuræ* and *parapleuræ* pale yellow, the former livid at the base. *Legs* pale yellow; 1st pair, *thighs*, in the ♂, at the base and apex black; *palæ* cultrate, in the ♂ broad, widened above, suddenly rounded, brown on the margins beneath, in the ♀ pointed; 2nd pair, *thighs* brown posteriorly; *tibiæ* brownish; *tarsi* with a brown spot at the apex; 3rd pair, *tibiæ* and *tarsi* with black cilia.

Abdomen above black, sides pale yellow; beneath, in the ♂, the

1st 4, in the ♀ the 1st 3 segments, black; the remainder pale ochreous.

Length, $3\frac{1}{2}$—$3\frac{3}{4}$ lines.

Very common in stagnant water, throughout the year.

Species 8.—Corixa Linnéi.

Corisa Linnéi, *Fieb.* Syn. Coris. No. 11 (1848); Spec. Coris, 25, t. 2, fig. 4, palæ (1851); *Fieb.* Europ. Hem. 94, 17 (1861).
? Corixa regularis, *H. Schf.* Wanz. ix, 52 & 57, t. 295, fig. 910 (1850).
Corisa (Corisa) Linnei, *Flor*, Rhyn. Liv. i, 794, 5 (1860).

Above fuscous-black, dull. *Pronotum* short, with 6 narrow, transverse pale lines. *Clavus* and *corium* throughout with very fine, close, parallel, undulating pale lines.

Head yellow; *Face;* in the ♂ very slightly concave, the depression reaching upwards to the lower angle of the eyes.

Thorax.—Pronotum short, with 6 fine, entire, transverse yellowish lines; the longitudinal middle line only in the least degree raised in front; side margins very narrowly yellowish. *Elytra; Clavus* and *Corium* with very fine, rather close, parallel, entire, yellowish lines, slightly undulating except on the basal ½ of the clavus, where they are straight, the 1st 3 or 4 being also broader; on the corium they are continued to the apex; towards the inner side, below the end of the clavus, faintly interrupted; *Corium;* anterior marginal channel pale livid yellowish; line of the membrane-suture black, indistinct; *Membrane* shining, the lines on the basal ½ very fine, transverse, dentate, but on the inner margin straight; on the posterior ½ the lines are broken, short, and irregular; anterior and posterior margins broadly blackish, the former without lines, on the latter they are also obsolete, or at most but faintly indicated. *Sternum;* black in the middle, sides and xyphus pale yellowish. *Legs* pale yellowish; 1st pair, *palæ* cultrate, in the ♂ nearly of equal breadth throughout, suddenly rounded from above at the apex, in the ♀ more pointed; margins beneath, and cilia, brown; 2nd pair, *thighs* brown posteriorly; *tibiæ* light brown, with a brown spot at the apex; 3rd pair, *tibiæ* and *tarsi* with black cilia.

Abdomen above black; *Connexivum* whitish-yellow; underside pale yellow; in the ♂ the 1st 4 or 5 segments blackish in the middle; *Genital segments* brown.

Very like *C. Sahlbergi*, but shorter and narrower, and different in the marks of the pronotum, in the corium being marked to the apex, &c.

Common in the Cambridge Fens (*G. R. Crotch*).

Species 9.—CORIXA SEMISTRIATA.

CORIXA STRIATA, *Zett.* Ins. Lap. 284, 2 (1840).
CORISA SEMISTRIATA, *Fieb.* Syn. Coris. No. 26 (1848); Spec. Coris. 36, 43, t. 2, fig. 2, palæ (1851); *Walleng.* Oefv. 150, 18 (1854); *Fieb.* Europ. Hem. 95, 20 (1861).
— UNDULATA (*Costa*), *H. Schf.* Wanz. ix, 57, t. 297, fig. 919 (1850).
— (CORISA) SEMISTRIATA, *Flor*, Rhyn. Liv. i, 797, 10 (1860).

Above brown-black, with fine, pale, yellow, transverse markings, slightly shining. *Pronotum* short, with 6—7 fine yellowish lines; *clavus* with entirely straight yellow lines, the first 4 or 5 broadest, the rest very fine, not reaching the inner margin; *corium* with the lines very fine, close and short, crossed by 3 longitudinal black lines; anterior margin posteriorly, and membrane-suture with a yellow line. *Palæ* of the ♂ nearly semicircular, convex.

Head yellow; *Crown* at the base brownish; *Face*; the depression reaching upwards as far as the middle of the eyes.

Thorax.—Pronotum short, with 6 or 7 fine yellowish lines, the longitudinal middle line slightly raised in front. *Elytra; Clavus* with entirely straight yellow lines, the 1st 4 or 5 broadest, the rest very fine, not reaching to the inner margin; *Corium* with the lines very fine, close and short, crossed by 3 longitudinal black lines, 1 close to the anterior marginal channel, 1 short, in the middle, and 1 rather longer and much the broadest near the inner margin; anterior margin livid, posteriorly with a small dark dash, beyond which to the apex and also on the membrane-suture is a distinct, narrow, yellow line; *Membrane* with fine, irregular, broken, twisted, yellow markings; margins brown, the anterior next the corium with a blackish spot. *Sternum* dusky yellowish; the middle, and at times the side lobes, except their apices, black. *Legs* pale yellow; 1st pair, *tibiæ* swollen, the end rounded, so that a perceptible notch-like space exists between it and the palæ; *palæ*, in the ♂, almost

semicircular, convex, base very oblique, a little widened beneath; ♀ broad-cultrate, pointed; 2nd pair, *tibiæ* and *tarsi* brownish, with a darker spot at the end; 3rd pair, *tibiæ* brownish; *tarsi*, cilia black.

Abdomen above black; *Connexivum* pale yellowish, beneath dusky yellowish; in the ♂ the 1st 3 or 4 segments (rarely all), in the ♀ the 1st 2, except on the posterior margin, black.

Length, 2½ lines.

Cambridge Fens (*G. R. Crotch*).

Species 10.—Corixa Wollastoni.

Above red-brown, slightly shining. *Pronotum* somewhat prolonged, with 9—10 transverse, curved, unequal, often shortened, dark-brown lines. *Elytra* with pale-yellow transverse lines; on the basal ⅓ of the clavus straight, in the middle shortened inwardly; *corium* inwardly clear of markings, outwardly with slightly undulating broken lines. *Palæ* of the ♂ cultrate, broadest in front, the end vertical.

Head.—Crown brown; *Face;* in the ♂, the depression oval, shallow, reaching broadly to about the middle of the eyes.

Thorax.—Pronotum somewhat prolonged, with 9—10 unequal, curved, often shortened, dark-brown lines; side margins brown. *Elytra* with pale-yellow transverse lines; on the basal ⅓ of the *Clavus* distant, straight, or some furcate at the inner end; on the middle interrupted; towards the lower end more regular; on the *Corium* at the base somewhat parallel, unequal, occasionally slightly undulating, on the outer ½ short; on the marginal nerve pale spots and short streaks; the inner ½ free from markings, except that on the inner margin, as far as the end of the clavus, is a row of short pale streaks; anterior marginal channel dull, light brown, spotless, its inner margin with a brown line; line of the membrane-suture pale, next the corium sharply defined, next the membrane undefined. *Sternum* pale; xyphus long-triangular, slightly obtuse, margins reflexed. *Legs;* 1st pair, *palæ* cultrate in the ♂, widest in front, the end, from the upper margin to the apex, rounded, almost vertical; in the ♀ convex above, concave beneath, gradually and regularly narrower to the apex; 2nd and 3rd pairs fuscous brown; *thighs* paler towards the base; 3rd pair, *tibiæ*, last 3rd, on the outer edge a narrow, on

the inner edge a broader black streak; *tarsi* on the sides, and the cilia black.

Abdomen beneath pale; the 1st 3 segments black on the sides; *Genital segments* yellowish at the sides.

Length, 3 lines.

"By the palæ allied to *C. præusta*, by the marking of the hinder legs to *C. concinna*." (*Fieb.* in litt.)

Only 2 examples, taken at Hebden Bridge, by Mr. T. V. Wollaston, to whose labours entomology is greatly indebted, and to whom, with much pleasure, we dedicate the species. One of the 2 specimens has been examined by Dr. Fieber, to whom it was new.

Species 11.—CORIXA CONCINNA.

CORISA CONCINNA, *Fieb.* Syn. Coris. No. 15 (1848); Spec. Coris. 31, t. 2, fig. 9, palæ (1851); Europ. Hem. 96, 22 (1861).

Above black, with close, transverse, yellow lines, shining. *Pronotum* elongate, rounded behind, with 9—10 curved, narrow, black lines, shortened in the middle. *Elytra* with close, short, undulating, yellow lines, but on the base of the clavus straight and broader. *Palæ* of the ♂ narrow cultrate, above gradually curved.

Head.—Crown brown; *Face* pale yellow, the depression reaching upwards nearly to the middle of the eyes.

Thorax.—Pronotum elongate, rounded behind, with 9—10 close, curved, narrow, transverse black lines on a yellowish ground, those in the middle shortened; longitudinal middle line visible only across the 1st 2 black ones. *Elytra* with close, short, much undulating yellow lines, on the base of the *Clavus* broader, straight or furcate; *Corium;* anterior marginal channel livid, posteriorly, on the outer ½ fuscous-black, on the inner ½ and continued to the apex of the corium, yellow; inner edge with a black line; line of the membrane-suture very slight, dusky; *Membrane* with the yellow markings outwardly somewhat furcate, extending to the margins, on the inner margin fine and subparallel; anterior margin black. *Sternum* dull yellow, black in the middle; xyphus yellow. *Legs* pale yellow; 1st pair, *palæ* in the ♂ narrow, cultrate, above gradually curved to the apex; in

the ♀ narrower, above with a longer curve to the apex; 2nd pair, *tibiæ* brownish at the apex; 3rd pair, *tarsi* beneath, 1st joint posteriorly, on each side of the apical margin, 2nd only at the base, black.

Abdomen above black, in the ♀ rufescent at the sides; underside dull yellow; in the ♂ the 1st 4 or 5 segments, in the ♀ the 1st 2, black; *Genital segments* fuscous, the margins pale.

Length, 3¼ lines.

Scarce. In the Ravensbourne, Lewisham, in October.

Species 12.—CORIXA NIGROLINEATA.

CORISA NIGROLINEATA, *Fieb.* Syn. Coris. No. 24 (1848); Spec. Coris. 34, 40, t. 2, fig. 18, palæ (1851); Europ. Hem. 96, 24 (1861).

CORIXA LINEOLATA, *H. Schf.* Wanz. ix, 55, t. 295, fig. 911 (1850).

Above light yellowish-gray, with fine, transverse, black lines, the intermediate spaces much broader. *Pronotum* with 7—8 black lines, sometimes shortened and confluent in the middle. The lines on the *clavus* straight and parallel, on the *corium* subparallel, with their edges jagged, the ends often furcate. *Palæ* in the ♂ broad-cultrate, above convex, base widened.

Head pale yellow, or brown on the *Crown;* posterior margin a little produced in the middle; *Face;* in the ♂, the depression reaching upwards to the eyes, its margin in front straight.

Thorax.—Pronotum short, rounded behind, with 7—8 black lines, sometimes shortened and confluent in the middle; side margins black; the longitudinal middle line visible only as a short keel in front. *Elytra; Clavus* throughout with straight, narrow, parallel, black lines, occasionally furcate at the end; *Corium* with the black lines not so straight or regular as on the clavus, especially posteriorly, their edges somewhat jagged and the ends more furcate, opposite the posterior inner angle traversed by a very short longitudinal black streak; anterior marginal channel black, yellow on and under the overhanging inner edge; beyond the end of the channel broadly yellow; line of the membrane-suture pale, broadest outwardly, followed by a dark line; *Membrane* with fine, angulated, hieroglyphic characters, on all the margins short, parallel; margins

black. *Sternum* black, side lobes pale yellow, those of the meso- and metasternum inwardly, and the xyphus, black. *Legs* pale yellow; 1st pair, *palæ* in the ♂ broad-cultrate, pointed, above convex, at the base oblique and widened; in the ♀ of similar form, but narrower; 2nd pair, *tarsi* brown at the apex; 3rd pair, *tarsi*, cilia dusky; all the *coxæ* black, dusky yellow at the apex.

Abdomen above black; *Connexivum* pale; underside black, the last 2 or 3 segments pale posteriorly.

Length, 2½—2⅝ lines.

Taken by Mr. G. R. Crotch, in the Cambridge Fens.

Species 13.—CORIXA STRIATA.

? NOTONECTA STRIATA, *Lin.* F. S. 904 (1761); S. N. 712, 2 (1767).
? CORIXA STRIATA, *Leach*, Trans. Lin. Soc. xii, 16, 2 (1817).
CORISA — *Fieb.* Syn. Coris. No. 17 (1848); Spec. Coris. 30, 33, t. 2, fig. 4, palæ (1851); *Walleng.* Oefv. xi, 147, 11 (1855); *Fieb.* Europ. Hem. 97, 28 (1861).
— BASALIS (*Costa*), *H. Schf.* Wanz. ix, 58, t. 297, fig. 918 (1850).
— (CORISA) STRIATA, *Flor*, Rhyn. Liv. i, 793, 7 (1860).

Black, with transverse yellow markings, shining. *Pronotum* short, with 6 yellow lines. *Clavus* at the base with a few, inwardly broad, straight, yellow lines, the rest fine, irregular; *corium* with fine, irregular, broken lines, at their outer ends crossed by a distinct longitudinal black line, and near their inner ends by a less distinct one. *Palæ* of the ♂ broad cultrate, convex above.

Head yellow or brown; *Face;* in the ♂, the depression short, not deep, not reaching upwards quite so far as the eyes.

Thorax.—Pronotum short, with 6 entire, straight, yellow lines; sides brown-black, yellow on the edge; longitudinal middle line visible only on and raised across the first 2 transverse lines. *Elytra; Clavus* with the first 4 or 5 yellow lines very broad, except at their outer end, so that the base of the clavus inwardly is conspicuously yellow; the rest of the yellow lines very narrow, especially on the middle of the disk, broken and irregular; *Corium* with subparallel, short irregular broken lines, crossed just before the inner edge of the anterior marginal channel by a stout black line, leaving a narrow,

linear yellow space between them, into which the ends of some of the black transverse markings project; near the inner margin a less distinct, longitudinal black streak; anterior marginal channel livid, brown on the inner edge, posteriorly with a small blackish streak; claval suture dark; line of the membrane-suture narrowly yellow, followed by a dark line; *Membrane* with fine, short markings, twisted on the disk, parallel on the inner margin; anterior and posterior margins narrowly blackish. *Sternum* dull yellow; *Prosternum;* lobes broad, oblique and narrowed posteriorly, slightly twisted. *Legs;* 1st pair, *palæ* in the ♂ broad cultrate, convex above; in the ♀ similar but narrower; 2nd pair, *tibiæ* and *tarsi* light brown at the apex; 3rd pair, *tibiæ* narrowly brown on the upper edge; *tarsi*, cilia black.

Abdomen above, black, the sides pale; beneath, pale yellow, in the ♂ the first 3 segments sometimes livid in the middle.

Length, 3¼—3½ lines.

Common in stagnant and running water in spring and autumn.

Species 14.—Corixa Fallénı.

Corisa Fallenii, *Fieb.* Syn. Coris. No. 18 (1848); Spec. Coris. 31, 34, t. 2, fig. 12, palæ (1851).

— Fallénı, *Walleng.* Oefv. xi, 147, 12 (1855); *Fieb.* Europ. Hem. 97, 28 (1861).

— (Corisa) Fallenii, *Flor*, Rhyn. Liv. i, 789, 3 (1860).

Above fuscous-black, with transverse yellow markings, slightly shining. *Pronotum* with 8—9, mostly entire, yellow lines. *Elytra* with somewhat close, yellow lines, straight but unequal at the base of the clavus, the rest undulating. Lobes of the *prosternum* narrow, twisted. *Palæ* of the ♂ very broad, subtriangular.

Head brown-yellow; *Face* in the ♂ paler, flat, scarcely depressed, as far upwards as the lower angles of the eyes.

Thorax.—Pronotum somewhat prolonged, with 8—9 mostly entire lines, the black intervals of about the same width, the middle one short. *Elytra* with transverse black and yellow lines; on the basal ⅓rd or ½ of the *Clavus* straight, entire, the yellow ones somewhat

broader on their inner end, on the middle of the disk very narrow, the rest undulating; on the *Corium* the yellow lines subparallel, somewhat close, slightly undulating, crossed just before the inner brown edge of the anterior marginal channel by a longitudinal, irregular, black line, formed by the connection of the expanded ends of the somewhat broader black lines which lie between the yellow ones; near the inner margin, above the posterior inner angle, the lines are interrupted by a longitudinal, fine, curved black streak; anterior marginal channel pale livid yellow, near its posterior end a black dash, not extending to the apex; inner margin of the clavus, the claval suture, and membrane-suture, narrowly yellow, the latter followed by a black line; *Membrane* with black and yellow, short, broken, undulating, mostly transverse, lines, but entire on the inner margin; anterior and posterior margins black-brown. *Sternum* yellow; *Prosternum;* lobes narrow, twisted, the end rounded. *Legs* pale yellow; 1st pair, *palæ*, in the ♂, very broad, subtriangular, at the base, on the upper side, extended almost at a right angle, then rounded at the angle and much curved to the apex; on the lower side at first produced downwards into a small triangle, then slightly curved inwards to the apex; in the ♀ broad, semilunate; 3rd pair, *tarsi* with black cilia.

Abdomen above, black with brown streaks, pale posteriorly; beneath pale yellowish, in the ♂ the first 4, in the ♀ the first 2 segments blackish; *Genital segments* sometimes blackish, pale on the margins.

Length, 3¼—3½ lines.

Common in the Cambridge Fens (*G. R. Crotch*).

Species 15.—CORIXA DISTINCTA.

CORISA DISTINCTA, *Fieb.*' Syn. Coris. No. 19 (1848); Spec. Coris. 32, 35, t. 2, fig. 13, palæ (1851); Europ. Hem. 97, 29 (1861).

— FIEBERI, *Kolen.* Mel. Ent. vi, 72, 280 (1857).

— (CORISA) DISTINCTA, *Flor,* Rhyn. Liv. i, 792, 6 (1860).

Above black, with transverse yellow markings, slightly shining. *Pronotum* with 8—9, mostly entire, yellow lines. *Elytra* with somewhat close yellow lines, on the basal 3rd of the *clavus* straight, rather more distant and broader, especially to their inner ends; in the middle of the disk a few very slight,

shortened or evanescent inwardly, the remainder, and those on the *Corium*, undulating; the latter crossed at their outer ends by a black line, and by a shorter one near the inner margin. Lobes of the *Prosternum* broad. *Palæ* of the ♂ long-semioval.

Head yellow, or *Crown* brownish; *Face* in the ♂ paler, the depression perceptible, oval, extending upwards slightly beyond the lower angles of the eyes.

Thorax.—Pronotum somewhat prolonged, with 8—9, mostly entire, fine yellow lines; the longitudinal middle line appearing only as a very short, narrow nodule in front. *Elytra* with somewhat close yellow lines; on the basal 3rd of the *Clavus* straight, rather more distant and broader, especially on their inner ends, on the middle of the disk a few very slight, shortened or evanescent inwardly, the remainder undulating; on the *Corium* narrow, undulating, parallel lines, crossed just before the inner edge of the anterior marginal channel by a longitudinal, irregular, black line (formed by the connection of the expanded ends of the broader black lines which lie between the yellow ones), and near the inner margin interrupted by a longitudinal, fine, black streak; anterior marginal channel pale yellow, brown on the inner edge, near the posterior end a black dash, not extending to the apex; inner margin of the clavus, the claval suture, and the line of the membrane-suture narrowly yellow, the last followed by a black line. *Membrane* with black and yellow short, undulating, hieroglyphic lines, but entire and parallel on the inner margin; anterior and posterior margins black-brown. *Sternum* yellow; *Prosternum;* lobes broad, the ends obliquely rounded. *Legs* pale yellow:—1st pair; *palæ;* in the ♂ long, semioval, not widened at the base; in the ♀ broad cultrate, slightly convex above.

Abdomen beneath pale yellow; in the ♂ the first 3 segments blackish; *Genital segments* pale.

Length, 3½ lines.

Very like *C. Fallèni*, but distinguished at once by the difference in the form of the *palæ*.

In the Ravensbourne, Lewisham, October.

Species 16.—Corixa mœsta.

Corisa mœsta, *Fieb.* Syn. Coris. No. 23 (1848); Spec. Coris. 34, 39, t. 2, fig. 17, palæ ♂ & ♀ (1851); Europ. Hem. 98, 30 (1861).

Above fuscous-brown, with pale, indistinct, transverse lines, dull. *Pronotum* with 6 lines. *Elytra* with slender, abbreviated, flexuous, subparallel lines. *Palæ* in the ♂ broad-cultrate, apex truncate, produced beneath into an obtuse angle.

Head shining, pale yellow, posterior margin brown, angulated in the middle; *Crown* often darker; *Face;* in the ♂ the depression narrow, not reaching upwards to the base of the eyes.

Thorax.—Pronotum very short, rounded posteriorly, with 6 nearly straight, mostly entire, narrow, dim yellow lines. *Elytra* with fine, flexuous, abbreviated, subparallel lines; on the base of the *Clavus* straight, entire, wide at their inner end; *Corium;* anterior marginal channel yellowish-fuscous, black on the outer edge of the embolium, yellowish inwardly; apex broadly dingy yellowish, without lines; membrane-suture dingy yellowish, undefined; *Membrane* with undulating, angulated lines, very indistinct on the anterior and posterior margins, parallel on the inner margin; anterior margin somewhat broadly black. *Sternum* black; lobes yellow, of prosternum entirely; *scapulæ* and *pleuræ* inwardly black; xyphus long, narrow, acute, black, the margins narrowly reflexed, and at times yellowish posteriorly. *Legs* orange-yellow; 1st pair, *palæ*, in the ♂, broad-cultrate, apex truncate, produced beneath into an obtuse angle; in the ♀ narrow, not widened at the base, convex above, apex acute; 2nd pair, *tibiæ* and *tarsi*, at the apex a brownish spot; 3rd pair, *tibiæ* with a brown line above, *tarsi* with black cilia, forming a line down the middle.

Abdomen above black; *Connexivum* pale dingy yellow; genital segments pale on the posterior margin; underside obscure yellowish, posterior margin of the segments yellowish; in the ♂ the first 4 or 5 segments, in the ♀ the first 2, black; *Genital segments* fuscous-black, posterior margins yellowish.

Length, 2¼ lines.

Not rare in stagnant water, April and September.

Species 17.—Corixa fossarum.

Corixa fossarum, *Leach*, Trans. Lin. Soc. xii, 17, 4 (1817).
Corisa — *Fieb.* Syn. Coris. No. 21 (1848); Spec. Coris. 32, 37, t. 2, fig. 15, palæ (1851); *Walleng.* Oefv. 149, 15 (1854); *Fieb.* Europ. Hem. 98, 32 (1861).
— (Corisa) fossarum, *Flor*, Rhyn. Liv. i, 795, 8 (1860).

Above fuscous-black, with pale yellow markings, slightly shining. *Pronotum* short, with 6 entire, yellow lines. *Clavus* with 4 or 5 straight lines at the base, the rest irregular, not reaching the inner margin; *Corium* with short, undulating yellow lines, not quite reaching the anterior marginal channel, before which is a black longitudinal line; a similar shorter line also near the inner margin. *Palæ* of the ♂ cultrate, convex above, the base broader than the end of the tibiæ.

Head yellow or brownish; *Face;* the depression longish, not deep, reaching upwards somewhat between the eyes.

Thorax.—Pronotum short, with 6 entire, straight, yellow lines; the longitudinal middle line shortly, slightly, and obtusely raised in front. *Elytra; Clavus* at the base with 4 or 5 fine, entire, straight, parallel yellow lines, slightly broader inwardly; the rest of the disk with fine, irregular yellow lines, not reaching the inner margin, or visible on the outer ½ only; *Corium* with undulating yellow lines, traversed near the inner margin by a short, longitudinal black streak, the intermediate black lines united outwardly, close to the anterior marginal channel, by a distinct, black, longitudinal line; claval suture very narrowly pale; anterior marginal channel pale livid gray, or whitish, posteriorly with a short, fuscous streak; apex outwardly and on the membrane-suture with a narrow, pale yellow line, the latter followed by a black one; *Membrane* fuscous-black, with short, broken, hieroglyphic, pale yellow markings, parallel on the inner margin, the middle of the disk almost clear of markings, the margins rather broadly fuscous black. *Sternum* pale yellow, black in the middle; xyphus black, the apex yellow, bent upwards. *Legs* very pale yellow; 1st pair, *palæ* cultrate, in the ♂ regularly convex above, at the base broader than the tibiæ, somewhat angulated above; in the ♀ semilunate.

Abdomen above black; *Connexivum* clear pale yellow; beneath pale yellow, in the ♂ the first 4 or 5, in the ♀ 2 or 3 segments, black.

Length, 2½ lines.

Common in the Cambridge Fens (*G. R. Crotch*).

Species 18.—Corixa Douglasi.

Corisa Douglasi, *Fieb.* (in litt.)

"Above black, entirely rastrate, with yellowish-white lines. *Pronotum* not prolonged, with 6—7 lines, the hinder ones curved, the 2 middle ones united outwardly into one. *Clavus* on the basal ½ with 6—7 straight, horizontal lines, shortened from the scutellar angle downwards; posterior ½ with short, interrupted, somewhat undulating, jagged, fine lines and spots. *Corium* with narrow, somewhat jagged and undulating lines, here and there broader at the end and shortened towards the margin, inwardly shortened, a longitudinal broad dark space, in which is a row of fine pale dots; line of the membrane-suture narrow, whitish, inwardly shortened; on the apex of the corium reaching to the dusky margin. *Membrane* with fine, interrupted, undulating lines, distant on the middle, parallel on the inner margin. *Abdomen* above black-brown; *Connexivum* and posterior segments yellowish-white.

"3⅔ lines. ♂; *Palæ* broad, long semioval, at the base broad; *tibiæ* short, thick, clavate. Frontal depression shallow, flattened towards the top, reaching to about the angles of the eyes. Underside yellowish-white; the xyphus short, almost cordate, convex, at the end channel formed, base brown. Middle of the *Sternum* under the coxæ, and the pleuræ on the suture, narrowly black. Lobes of the *prosternum* of equal width throughout, in front obliquely rounded. The first 2 segments of the abdomen and the 3rd on the base blackish.

"Allied to *C. fossarum;* resembles it in markings, but has different xyphus and palæ, the latter very like those of *C. distincta.*"

A single specimen taken in the Cambridge Fens, by Mr. G. R. Crotch, and sent to Dr. Fieber for determination, has been named and described by him as above.

Note.—*Corixa striata, stagnalis, lateralis,* and *dorsalis,* four British species, described by Dr. Leach in the 12th vol. of the

Linnean Society's 'Transactions,' it is impossible to distinguish on account of the insufficiency of the description, now that the number of known species, many of them extremely alike, is so much increased.

Genus 2.—CYMATIA, *Flor*.

In general character like *Corixa*, but different in the following respects.

Head, including the eyes, considerably wider than the pronotum; *Crown* horizontal, longer than the pronotum, the raised middle with a longitudinal depression on each side of it; *Face* lying beneath the crown at an acute angle, in the ♂ concave, in the ♀ flat. *Rostrum; labrum* smooth. *Eyes;* the posterior margin not reaching the base of the head.

Thorax.—Pronotum and *Elytra* smooth, the former unicolorous, without transverse lines. *Legs;* 1st pair, *tibiæ* ⅓rd the length of the tarsi; *tarsi* (palæ) in the ♂ ensiform, in the ♀ aculeate, outwardly rounded, towards the base a little thinner, sides subparallel, the base of the same thickness as the apex of the tibiæ, the junction scarcely visible; the cilia on the underside very long, in 2 rows; 3rd pair, *tarsi;* 1st joint scarcely more than twice as long as the 2nd.

Species 1.—CYMATIA BONSDORFFII.

CORIXA BONSDORFFII, *Sahlb.* Not. Fen. 13, 6 (1819).
— BONSDORFFII, *Fall.* Hem. Suec. i, 184, 6 (1829); *H. Schf.* Wanz. ix, 53, figs. 916 & 917 (1850).
CORISA (CYMATIA) BONSDORFFII, *Flor*, Rhyn. Liv. i, 801, 2 (1860).
— BONSDORFI, *Fieb.* Europ. Hem. 90, 2 (1861).

Above brown. *Pronòtum* twice as broad as long, with a short, longitudinal keel in front, extending to or a little beyond the middle. *Elytra* with narrow, irregular, transverse, very pale brownish-yellow lines. *Membrane* developed.

Head yellow or reddish-yellow; *Crown;* hinder margin narrowly pitchy black; the longitudinal depression on each side of the raised

middle, and along the inner margin of the eyes, punctured; *Face* pale yellowish-white. *Eyes* black.

Thorax.—Pronotum reddish-brown; posterior margin generally narrowly pitchy black. *Elytra: Clavus;* inner margin narrowly yellowish; suture narrrowly black; disk with about 12 transverse yellowish lines, 2 or 3 next the base broadest, those towards the apex frequently very short and confluent, leaving irregular-shaped brown spots; base broadly yellowish interiorly; *Corium* brown; anterior margin of the claval suture narrowly yellowish; disk with numerous fine, short, confused, subreticulate, yellow lines, especially towards the apex; anterior marginal channel whitish as far as the apex of the interior margin, beyond the latter yellowish; interior and exterior margins narrowly piceous; line of the membrane-suture internally yellowish, externally brown; *Membrane* brown, with several short, fine, subreticulate, yellow lines. *Sternum; Mesosternum* of the ♀ with a small black patch in the middle; xyphus yellow. *Legs* yellow; 1st pair, *tibiæ* with a longitudinal row of brownish spots on the upper and undersides; 2nd pair, *thighs* sometimes narrowly pale brownish at the apex; *tibiæ* and *tarsi* at the apex brown; 3rd pair, *thighs* reddish or brownish-yellow at the apex; *tibiæ* and *tarsi* brown.

Abdomen of the ♂ underneath black; *connexivum* yellow; ♀ underneath yellowish-white.

Length, 2¼—2½ lines.

Not rare in the Cambridge Fens (*G. R. Crotch*).

Species 24—CYMATIA COLEOPTRATA.

SIGARA COLEOPTRATA, *Fab.* E. S. 60, 3 (1794); *Panz.* F. G. 50, 24 (1798); *Fab.* S. R. 105, 4 (1803).

CORIXA — *Leach*, Lin. Soc. Trans. xii, 16, 1 (1817); *Fall.* Hem. Suec. i, 185, 7 (1829); *Burm.* Handb. ii, 188, 4 (1835); *H. Schf.* Nom. Ent. i, 64 (1835); Wanz. ix, 53, fig. 915 (1850).

CORISA — *Am. et Serv.* Hém. 448, pl. 8, fig. 6 (1843); *Fieb.* Spec. Coris. 40, 51, tab. ii, fig. 29, palæ (1851); Europ. Hem. 90, 1 (1861).

— (CYMATIA) COLEOPTRATA, *Flor*, Rhyn. Liv. i, 800, 1 (1860).

Above brown, unicolorous. *Pronotum* almost 4 times as broad as long, with a very short, longitudinal keel in front. *Elytra* without transverse lines; *Membrane* and *Wings* wanting.

Head yellow; *Crown;* hinder margin narrowly black; the longitudinal depression on each side of the raised middle punctured; *Face* yellowish-white; *Eyes* black.

Thorax.—Pronotum yellowish-brown; posterior margin piceous. *Elytra* a little longer than the abdomen, apex spatulate; *Clavus;* inner margin narrowly yellowish; suture narrowly black nearly throughout its entire length; disk very pale brownish-yellow; apex rather broadly brownish; *Corium* brownish, with a longitudinal streak before the inner edge of the anterior marginal channel, another down the centre, and the anterior margin of the claval suture very narrowly pale brownish-yellow; anterior marginal channel yellowish-white, exteriorly and interiorly narrowly pitchy black; posterior margin broadly pale brownish-yellow, divided by a brownish streak, extending from the apex of the clavus almost to the apex of the elytra, where it is somewhat widest; apex brown; *Membrane* and *Wings* wanting. *Sternum: Mesosternum;* centre sometimes narrowly blackish; xyphus yellowish-white. *Legs* yellow; *tibiæ* and *tarsi* of the 2nd pair at the apex black; *tarsi* of the 3rd generally broadly brownish, black down the centre; cilia brown.

Abdomen; underside of the ♂ black; *Connexivum* yellow; underside of the ♀ yellow.

Length, 1½ line.

Not rare in the Cambridge Fens (*G. R. Crotch*); occasional near London.

Family 2.—SIGARIDÆ.

Genus 1.—Sigara, *Fab.*

Elliptic, slightly convex, shining.

Head transverse, not wider than the pronotum, short, triangular, front convex, sides subangular; seen from above (including the eyes) obtuse triangular; *Face* in the same curve with the Crown, not visibly separated. *Antennæ* very short, 3-jointed; 1st and 2nd joints cylindrical, stout, subequal; 3rd longest, oval, concave. *Eyes*

large, triangular, remote. *Rostrum* unarticulated; *Labrum* cross-wrinkled.

Thorax.—*Pronotum* transverse, very short, subtriangular, pointed in front. *Scutellum* small, triangular. *Elytra* soft, flexible; *Clavus* with a distinct trapezoidal piece at the base; *Corium*; the anterior margin on the basal ½ incrassated, shining and coloured like the disk. *Wings* with 1 cell on the anterior margin, with a nerve projecting at the end. *Sternum; Prosternum* short, laterally bilobed, the lobes quadrangular; *Mesosternum* short, transverse, anteriorly deeply excised; *Scapulæ* linear, oblique; *Metasternum* small, produced into a triangular xyphus; *Pleuræ* trapezoidal, without suture; *Parapleuræ* wanting. *Legs;* 1st pair, *coxæ* oblong, stout, somewhat compressed, as long as the thighs; *tibiæ;* in the ♂ clavate, the base curved; *tarsi;* in the ♂ articulated to the tibiæ, oblique-oval, compressed, ciliated beneath, without apical claw; in the ♀ anchylosed with the tibiæ, rhomboidal, with 1 setaceous claw; 2nd pair, *coxæ* ⅓rd the length of the thighs, compressed; *thighs* simple, elongate; *tibiæ* slender, ⅓rd the length of the thighs; *tarsi* rather longer than the tibiæ, 2-jointed, with 2 straight, setaceous claws; 3rd pair, *coxæ* ½ shorter than the thighs, compressed; *thighs* clavate, base and apex narrowed; *tibiæ* and *tarsi* as in *Corixa*, the latter dilated; above on the external margin densely pilose, the 2nd joint ½ the length of the 1st, with 1 short claw.

Abdomen as in *Corixa*.

Species 1.—SIGARA MINUTISSIMA.

NOTONECTA MINUTISSIMA, *Lin.* F. S. 905 (1761); S. N. 713, 3 (1767).
SIGARA MINUTA, *Fab.* S. R. iv, 105, 6 (1803); *Leach*, Lin. Soc. Trans. xii, 14 (1817); *Fall.* Hem. Suec. i, 179, 1 (1829); *Burm.* Handb. ii, 188, 1 (1835); *Fieb.* Ent. Mon. 13, 1, tab. 1 (1845); *H. Schf.* Wanz. ix, 46, fig. 907 (1850); *Fieb.* Gen. Hyd. 29, 20, tab. 4, D (1851); *Flor*, Rhyn. Liv. i, 803, 1 (1860); *Fieb.* Europ. Hem. 89, 2 (1861).
CORIXA MINUTISSIMA, *H. Schf.* Nom. Ent. i, 63 (1835).

Grayish-yellow or dark gray.

Head yellowish-white, with a brown or reddish-brown central streak.

Thorax.—Pronotum pitchy brown; in the centre of the anterior margin a small callosity, the latter, the posterior margin, and sometimes a central line, yellowish-white. *Scutellum* yellowish-white. *Elytra: Clavus;* the trapezoidal piece at the base yellowish-white; disk with a large pitchy brown patch at the base, and a small one before the apex; margin of the suture grayish-yellow or dark gray; *Corium;* exterior margin of the claval suture grayish-yellow or dark gray; disk at the base with a pitchy brown patch, in the middle a broad, very irregular, transverse, diagonal band, generally almost divided in the centre, and a small patch before the apex, pitchy brown; anterior margin yellowish-white, with 2 short, pitchy brown streaks, one before, the other in the middle; apical margin pitchy brown. *Legs* pale yellow; *tarsi;* 1st joint of the 3rd pair with a brown or black streak along the outside.

Abdomen, underside, 3 or 4 basal segments brown.

Length, $\frac{1}{8}$ line.

Not rare in the Cambridge Fens (*G. R. Crotch*).

REPUTED BRITISH SPECIES.

Div. 1.—GYMNOCERATA.

Sub-Div. 1.—GEODROMICA.

SECTION 1.—*SCUTATINA.*

CYDNUS TRISTIS, *Fab.*
THYREOCORIS GLOBUS, *Fab.*
ÆLIA KLUGI, *Hahn.*
TETYRA FULVICORNIS, *Fab.*
EYSARCORIS BINOTATUS, *Hahn.*
PENTATOMA PRASINA, *Lin.*
PUSILLA, *H. Schf.*
LYNX, *Fab.*
PICTA, *Fab.*
CUSTOS, *Fab.*
MARGINEGUTTATA, *Hahn.*
ACANTHOSOMA LITURATA, *Fab.*
RHAPHIGASTER GRISEUS, *Fab.*

SECTION 2.—*COREINA.*

COREUS SCABRICORNIS, *Panz.*
DENTICULATUS, *Scop.*
KLEIDOCERYS MAGNICORNIS, *Fab.*
ATRACTUS SPINIPES, *Fall.*
RHOPALUS TIGRINUS, *Schill.*
ABUTILON, *Rossi.*

SECTION 4.—*LYGÆINA.*

LYGÆUS EQUESTRIS, *Lin.*
PUNCTUM, *Fab.*
FAMILIARIS, *Fab.*

PACHYMERUS PLEBEIUS, *Fall.*
ECHII, *Fab.*
QUADRATUS, *Fab.*
RHYPAROCHROMUS LYNCEUS, *Fab.*
SYLVESTRIS, *Lin.*
VULGARIS, *Schill.*
MARGINEPUNCTATUS, *Wolff.*
NEBULOSUS, *Fall.*

SECTION 6.—*TINGIDINA.*

DICTYONOTA ERYTHROPTHALMA, *Germ.*
TINGIS PUSILLA, *Fall.*
CASSIDEA, *Fall.*
NIGRINA, *Fall.*
GALEATUS CRISTATA, *Panz.*
SPINIFRONS, *Fall.*
PYRI, *Fab.*
MONANTHIA GRISEA, *Germ.*
SETULOSA, *Fieb.*
CAPUCINA, *Germ.*
ORTHOSTIRA GRACILIS, *Fieb.*
LACCOMETOPUS CLAVICORNIS, *Lin.*

SECTION 8.—*CORTICICOLINA.*

ARADUS BETULÆ, *Lin.*

SECTION 9.—*CAPSINA.*

PHYTOCORIS POPULI, *Lin.*
CAPSUS UMBRATILIS, *Fab.*
BREVIS, *Panz.*
LYGÆUS RUGICOLLIS, *Fall.*
SELADONICUS, *Fall.*
PŒCILOSOMA RUBICUNDA, *Fall.*
CYLLECORIS DECORATUS, *Meyer.*

LYGUS FALLENII, *Hahn.*
HOLOSERICEUS, *Hahn.*
EURYMEROCORIS ALBIPENNIS, *Fall.*
TERATOSCOPIS PLAGIATUS, *H. Schf.*
GLOBICEPS SPHEGIFORMIS, *Rossi.*

SECTION 10.—*ANTHOCORINA.*

HYLOPHILA CURSITANS, *Fall.*
SERATULÆ, *Fab.*

SECTION 11.—*OCULATINA.*

SALDA RIPARIA, *Hahn.*

SECTION 12.—*REDUVINA.*

NABIS ? ANNULATUS, *Fab.*
LINEATUS, *Dahlb.*

Sub-Div.—HYDRODROMICA.

SECTION 1.—*HYDROMETRINA.*

GERRIS RUFOSCUTELLATA, *Lat.*
VELIA RIVULORUM, *Lin.*

Div. 2.—CRYPTOCERATA.

Sub-Div.—AQUATILIA.

SECTION 4.—*NOTONECTINA.*

NOTONECTA LUTEA, *Müller.*

SECTION 5.—*CORIXINA.*

CORISA FABRICII, *Fieb.*
LIMITATA, *Fieb.*

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CAMPYLOSTIRA	257		
brachycera	259	9	6
verna	258		
CAPSIDÆ	32		
CAPSINA	27		
CAPSUS	441		
capillaris	442	14	8
scutellaris	443		
CARDIASTETHUS	506		
testaceus	507	17	5
CERALEPTUS	126		
squalidus	127	5	1
CERATOCOMBIDÆ	37		
CERATOCOMBUS	513		
muscorum	514	21	5
CHARAGOCHILUS	445		
Gyllenhalii	446	15	1
CHILACIS	230		
Typhæ	231	8	6
CHOROSOMA	138		
Schillingi	139	5	5
CHOROSOMIDÆ	17		
CŒCIGENINA	19		
CONOSTETHUS	397		
roseus	398	13	4
CORANUS	540		
subapterus	541	18	2
COREIDÆ	17		
COREINA	16		
COREUS	117		
hirticornis	118	4	7
CORIMELÆNA	58		
Scarabæoides	58	2	2
CORIXA	591		
affinis	595		
concinna	604		
distincta	608		
Douglasi	612		
Falléni	607		
fossarum	611		
Geoffroyi	593	20	5
hieroglyphica	598		
Linnéi	601		
lugubris	596		
mœsta	610		
nigrolineata	605		
Panzeri	594		
Sahlbergi	600		
semistriata	602		
Stâli	597		
striata	606		
Wollastoni	603		
CORIXIDÆ	50		
CORIXINA	49		
CORIZIDÆ	17		
CORIZUS	130		
capitatus	133	5	3
crassicornis	131		
maculatus	133		
parumpunctatus	135		
CORTICICOLINA	25		
CRYPTOCERATA	11		
CYDNIDÆ	12		
CYLLOCORIS	367		
histrionicus	368	12	3
CYMATIA	613		
Bonsdorffii	613	21	6
coleoptrata	614		
CYMIDÆ	22		
CYMUS	234		
clavicula	235	8	8
glandicolor	236		

	Page.	Pl.	Fig.
DERÆOCORIDÆ	29		
DERÆOCORIS	315		
binotatus	323		
bipunctatus	319		
Chenopodii	325		
ferrugatus	327		
fornicatus	329		
fulvomaculatus	316	11	1
infusus	331		
marginellus	328		
seticornis	324		
sexguttatus	322		
striatellus	318		
striatus	320		
Ticinensis	330		
DEREPHYSIA	253		
foliacea	254	9	4
DICHROOSCYTIDÆ	34		
DYCHROOSOYTUS	477		
rufipennis	478	15	8
DICTYONOTA	255		
crassicornis	255	9	5
strichnocera	256		
DIEUCHES	179		
luscus	180	6	8
DIPSOCORIS	514		
alienum	515	17	8
DRYMUS	196		
brunneus	198	7	4
pilipes	199		
sylvaticus	196		
ENOPLOPS	111		
Scapha	112	4	4
EREMOCORIS	176		
erraticus	177	6	7
EROTICORIDÆ	34		
EROTICORIS	471		
rufescens	472	14	6
EURYGASTER	64		
Hottentottus	66		
maurus	65	2	5
EURYGASTRIDÆ	13		
EYSARCORIS	74		
æneus	76		
melanocephalus	75	2	9
GASTRODES	165		
Abietis	167		
G. ferrugineus	168	6	4
GEODROMICA	10		
GLOBICEPIDÆ	31		
GLOBICEPS	362		
flavomaculatus	364		
flavonotatus	366	12	1
selectus	363		
GONOCERUS	113		
venator	114	4	5
GYMNOCERATA	10		
HALTICOCORIDÆ	35		
HALTICOCORIS	478		
luteicollis	480	21	1
pallicornis	479		
HARPOCERA	468		
thoracica	469	15	3
HARPOCERIDÆ	33		
HEBRIDÆ	25		
HEBRINA	25		
HEBRUS	265		
pusillus	266	19	4
HEMIPTERA-HETEROPTERA	9		
HEMIPTERA-HOMOPTERA	10		
HENESTARIDÆ	22		
HENESTARIS	227		
laticeps	229	8	5
HETEROCORDYLUS	432		
leptocerus	433	14	3
tibialis	434		
unicolor	432		
HETEROTOMA	437		
merioptera	438	14	5
HOPLOMACHUS	395		
Thunbergii	396	13	3
HYDRODROMICA	11		
HYDROMETRA	557		
argentata	568		
gibbifera	564	19	1
lacustris	566		
Najas	560		
paludum	559		
thoracica	562		
HYDROMETRIDÆ	41		
HYDROMETRINA	40		

	Page.	Pl.	Fig.
HYPNOPHILUS	208		
hemipterus	209		
micropterus	208	7	7
IDOLOCORIDÆ	31		
IDOLOCORIS	374		
annulatus	376		
errans	379	12	4
globulifer	377		
pallicornis	375	12	5
pallidus	380		
ISCHNODEMUS	219		
sabuleti	220	8	2
ISCHNORHYNCHUS	232		
Resedæ	238	8	7
JALLA	89		
dumosa	90	3	4
LIMNOBATES	575		
stagnorum	576	19	7
LIMNOBATIDÆ	42		
LIMNOBATINA	42		
LIOCORIS	449		
tripustulatus	450	15	4
LITORALIA	11		
LITOSOMA	334		
angustus	343		
chloropterus	345		
concolor	340		
ericetorum	343		
flavinervis	338		
flavosparsus	341		
nassatus	337	11	3
ochrotrichus	342		
prasinus	344		
striicornis	336		
virescens	339		
viridinervis	335		
LITOSOMIDÆ	30		
LOPIDÆ	34		
LOPOMORPHUS	293		
carinatus	294		
dolobratus	297		
ferrugatus	295	10	6
LOPUS	474		
gothicus	475		
Miles	476	15	7
LYCTOCORIS	498		
domesticus	499	17	1
LYGÆINA	20		
LYGIDÆ	33		
LYGUS	456		
campestris	463		
contaminatus	461		
lucorum	458		
pabulinus	457		
pratensis	464	15	2
rubricatus	462		
Spinolæ	458		
sulcifrons	459		
MACROCOLEUS	386		
molliculus	387	12	9
Paykullii	388		
MACROLOPHUS	381		
nubilus	382	12	6
MALACOCORIS	383		
chlorizans	383	12	7
METACANTHIDÆ	19		
METACANTHUS	145		
punctipes	146	5	8
METASTEMMA	545		
guttula	546	18	6
METATROPIS	147		
rufescens	148	5	9
MICROPHYSIDÆ	36		
MICROVELIA	573		
pygmæa	574	19	3
MIRIDÆ	29		
MIRIDIUS	299		
quadrivirgatus	300	10	7
MIRIS	282		
calcaratus	286		
erraticus	287		
holsatus	283		
lævigatus	284	10	4
longicornis	289		
ruficornis	290		
MONALOCORIS	278		
Filicis	279	10	2
MONANTHIA	243		
ampliata	252	9	3
Cardui	251		
costata	248		
dumetorum	246	9	2

	Page.	Pl.	Fig.
M. Humuli	244		
quadrimaculata	247		
reticulata	250		
simplex	245		
MYRMEDOBIA	483		
coleoptrata	484	16	1
MYRMUS	136		
Miriformis	137	5	4
NABIDÆ	39		
NABIS	547		
apterus	550		
brevipennis	549		
dorsalis	552		
ferus	555		
flavomarginatus	554	18	5
limbatus	551		
NAUCORIDÆ	45		
NAUCORINA	44		
NAUCORIS	579		
Cimicoides	580	19	6
NEIDES	160		
depressus	161	6	2
Tipularius	162		
NEOCORIS	423		
Bohemanni	424	13	9
Scotti	425		
NEPA	583		
cinerea	584	20	1
NEPIDÆ	46		
NEPINA	45		
NOTONECTA	585		
glauca	587	20	4
maculata	588		
NOTONECTIDÆ	48		
NOTONECTINA	47		
NYSIUS	225		
Thymi	226	8	4
OCULATINA	38		
ODONTOSCELIDÆ	13		
ODONTOSCELIS	59		
fuliginosa	60	2	3
ONCOTYLIDÆ	32		
ONCOTYLUS	392		
decolor	393	13	2
pilosus	395		
Tanaceti	394		

	Page.	Pl.	Fig.
ORTHOCEPHALUS	429		
mutabilis	430		
saltator	431	14	2.
ORTHOPS	451		
cervinus	454		
Kalmii	452		
Pastinacæ	455	15	5
ORTHOSTIRA	260		
cervina	262	9	7
concinna	260		
obscura	263		
PANTILIUS	332		
tunicatus	333	11	2
PENTATOMA	77		
baccarum	80		
dissimile	83	3	1
Juniperinum	81		
nigricorne	78		
vernale	82		
PENTATOMIDÆ	15		
PERITRECHUS	187		
luniger	188	7	1
nubilus	189		
PHYGADICIDÆ	21		
PHYGADICUS	221		
Artemisiæ	224		
Urticæ	222	8	3
PHYLIDÆ	30		
PHYLUS	354		
Avellanæ	357		
Coryli	356		
melanocephalus	355	11	7
palliceps	355		
PHYTOCORIDÆ	29		
PHYTOCORIS	301		
crassipes	309		
dimidiatus	307		
distinctus	302		
divergens	311		
dubius	305		
Tiliæ	303	10	8
Ulmi	313		
PICROMERUS	95		
bidens	96	3	7
PIEZODORUS	99		
purpureipennis	100	3	9

	Page.	Pl.	Fig.
PIEZOSTETHUS	500		
galactinus	500	17	2
rufipennis	501		
PIONOSOMUS	194		
varius	195	7	3
PITHANIDÆ	28		
PITHANUS	280		
Märkeli	281	10	3
PLAGIOGNATHUS	400		
arbustorum	402	13	5
viridulus	401		
PLEA	590		
minutissima	591	20	3
PLEIDÆ	48		
PLINTHISUS	211		
bidentulus	212		
brevipennis	211	7	8
PLOCIOMERUS	169		
fracticollis	170	6	5
PLOIARIA	534		
erratica	536		
vagabunda	536	18	1
PODOPIDÆ	14		
PODOPS	72		
inuncta	73	2	8
PŒCILOSCYTUS	466		
unifasciatus	467	15	6
PSALLIDÆ	32		
PSALLUS	410		
Alni	414		
dilutus	417		
distinctus	419		
Fieberi	420		
lepidus	416		
Querceti	412		
roseus	417		
salicellus	411		
Salicis	415		
sanguineus	413		
varians	418	13	7
PSEUDOPHLŒUS	123		
Falléni	124	4	9
nubilus	125		
PYGOLAMPIS	538		
bifurcata	539	18	4
PYRRHOCORIDÆ	20		
PYRRHOCORIS	163		
apterus	164	6	3
RANATRA	581		
linearis	582	20	2
RANATRIDÆ	46		
RAPHIGASTRIDÆ	16		
REDUVIIDÆ	39		
REDUVINA	38		
REDUVIUS	542		
personatus	544	18	3
RHACOGNATHUS	91		
punctatus	92	3	5
RHOPALOTOMUS	439		
ater	440	14	7
RHYPAROCHROMIDÆ	20		
RHYPAROCHROMUS	201		
antennatus	206		
chiragra	203		
dilatatus	204	7	6
dimidiatus	207		
pilicornis	202		
prætextatus	205		
SALDA	516		
cincta	531		
elegantula	533		
lateralis	519		
littoralis	528		
marginalis	524		
orthochila	521		
pallipes	527		
pilosa	518		
pulchella	520	17	9
riparia	530		
saltatoria	522		
stellata	525		
SALDIDÆ	38		
SCIOCORIDÆ	13		
SCIOCORIS	61		
terreus	62	2	4
SCOLOPOSTETHUS	181		
adjunctus	183	6	9
affinis	185		
contractus	186		
pictus	182		
SCUTATINA	11		
SEHIRUS	51		
albomarginatus	56		
bicolor	52		

	Page.	Pl.	Fig.
S. biguttatus	54		
dubius	53		
morio	55	2	1
SIGARA	615		
minutissima	616	20	6
SIGARIDÆ	50		
SPATHOCERA	120		
Dalmani	122	4	8
SPHYRACEPHALUS	348		
ambulans	349	11	5
elegantulus	351		
STENOCEPHALIDÆ	18		
STENOCEPHALUS	140		
agilis	141	5	6
neglectus	142		
STHENARUS	421		
Rotermundi	422	13	6
STIPHROSOMA	481		
leucocephala	482	21	2
STIPHROSOMIDÆ	35		
STRACHIA	84		
oleracea	86	3	2
ornata	85		
STYGNOCORIS	213		
arenarius	216		
rusticus	214	7	9
sabulosus	215		
SYROMASTES	109		
marginatus	110	4	3
SYSTELLONOTUS	369		
triguttatus	370	12	2
SYSTRATIOTUS	443		
nigritus	444	14	9
TEMNOSTETHUS	491		
lucorum	492	16	5
pusillus	493		
TETRAPHLEPS	490		
vittatus	491	16	4
THERAPHA	128		
Hyoscyami	129	5	2
TINGIDIDÆ	24		
TINGIDINA	23		
TINICEPHALUS	390		
obsoletus	391	13	1
TRAPEZONOTUS	190		
agrestis	192	7	2
distinctus	191		
TRIPHLEPS	502		
minutus	504	17	3
niger	502		
obscurus	503		
TROPICORIS	97		
rufipes	98	3	8
TROPISTETHUS	200		
holosericeus	200	7	5
UNICELLULI	28		
VELIA	569		
currens	571	19	2
VELIIDÆ	42		
VERLUSIA	115		
rhombea	116	4	6
XYLOCORIS	507		
ater	508	17	6
ZICRONA	88		
cœrulea	88	3	3
ZOSMERIDÆ	22		
ZOSMERUS	237		
capitatus	240		
Laportei	239		
quadratus	238	8	9
ZYGONOTUS	486		
elegantulus	488	16	2
Pselaphiformis	487	16	3

ADDENDA ET CORRIGENDA.

Page 14, line 5, *after* beyond, *insert* the base of.
„ 14 „ 11, *for* long, *read* short, and *for* narrow, *read* short.
„ 14 „ 12, *for* wide, *read* longer.
„ 14 „ 7 from bottom, ÆLIODES, *read* ÆLIOIDES.
„ 16 „ 11 from bottom, *for* angle, *read* angles.
„ 20 „ 5 from bottom, *for* ZOSMORIDÆ, *read* ZOSMERIDÆ.
„ 21 „ 14, *for* MACRONOTUS, *read* CALYPTONOTUS.
„ 21 „ 16, *for* DRYMOPHILUS, *read* DRYMUS.
„ 21 „ 17, *for* HYPNOPHILA, *read* HYPNOPHILUS.
„ 22 „ 8 from bottom, *for* ZOSMORIDÆ, *read* ZOSMERIDÆ.
„ 23 „ 22, *for* ZOSMORUS, *read* ZOSMERUS.
„ 25 „ 6, *before* compressed, *insert* form.
„ 29 „ 17, *for* LOPOMORPHA, *read* LOPOMORPHUS.
„ 33 „ 15, *for* POLYMERUS, *read* SYSTRATIOTUS.
„ 34 „ 4, *for* MYRMICOCORIDÆ, *read* EROTICORIDÆ.
„ 34 „ 16, *for* MYRMICOCORIS, *read* EROTICORIS.
„ 34 „ 7 from bottom, *for* DICHROOSYCTIDÆ, *read* DICHROOSCYTIDÆ.
„ 35 „ 6, *for* DICHROOSYCTUS, *read* DICHROOSCYTUS.
„ 45 „ 8, *for* ciliæ, *read* cilia.
„ 54 „ 1, *for* larger, *read* longer.
„ 65 „ 5, *for* narrow, *read* short.
„ 71 „ 11 from bottom, *for* PENTATONIA, *read* PENTATOMA.
„ 87 „ 2 from bottom, *for E. Lewis*, *read G. Lewis*.
„ 103 „ 6, *for* ointed, *read* pointed.
„ 136 „ *after* 2nd, *dele* the comma.
„ 136 „ 19, *for* 4th, and 5th, *read* 3rd and 4th.
„ 171 „ 9, *after* which, *insert* on the Corium.
„ 178 „ 18, *for* coxa, *read* coxæ.
„ 200 „ 5, *after* length, *dele* the comma.
„ 216, last 2 lines, *dele* and 3rd.
„ 219, line 5 from bottom, *after* convex, *insert* in the ♀
„ 231 „ 13 from bottom, *for* marked, *read* mark.
„ 231 „ 4 from bottom, *for* coxæ, *read* cóxa.
„ 273 „ 17, *for* margin, *read* margins.
„ 282 „ 17, *for* Lympstino, *read* Lympston.
„ 283 „ 4 *et seq.*, where the word occurs with reference to the posterior margin of the pronotum, *for* across, *read* on.
„ 284 „ 15 from bottom, *for* Hendly, *read* Headley.
„ 293 „ 7, *for* the present, *read* last.
„ 299 „ 12 from bottom, *for* broad, *read* long.
„ 324 „ 25, *for* North, *read* South.
„ 371 „ last, *for* sorrel, *read* meadows.
„ 374 „ last, *for* χόρις, *read* κόρις.
„ 489 „ 2 from bottom, *for* on, *read* in.
„ 491 „ 11 from bottom, after hairs, *for* the semicolon, put a comma.
„ 504 „ 3, *after* fuscous, put a comma.
„ 553 „ 17, *after* long, *insert* as.
„ 556 „ 19, *for* proceed, *read* proceeds.

PLATE 1.

GENERAL STRUCTURE.

Fig. A. Upperside (*Scutatina*).
1, *Head*, showing the 3 lobes of the face, 4 antenna; 5, pronotum; 6, elytron; 7, corium; 8, clavus; 9, membrane; 10, scutellum (one half removed); 11, wing; 12, abdomen, *a—f* the 6 abdominal segments; 13, the genital segments; 14, the connexivum.

Fig. A 1. Head upperside, enlarged; 2, ocellus; 3, eye.

Fig. A 2*a*. Head (*Capsina*), front view; 1, antenniferous process; 2, central lobe of the face; 3, crown, the front being the clypeus.

Fig. A 2*a**. Head (*Capsina*) profile; 1, antenniferous process; 2, central lobe of the face; 3, crown and clypeus.

Fig. B. Underside (*Scutatina*).
1, Head (rostrum removed); 4, prosternum; 5, mesosternum; 6, metasternum; 7, the orifice of the odoriferous sac; 8, coxa; 9, abdomen, *a—f* the 6 abdominal segments (the dots are the stigmata); 10, the 3 genital segments.

Fig. B 1. Head underside; 2, antenniferous tubercle; 3, the rostral channel, with the rostrum *in situ*.

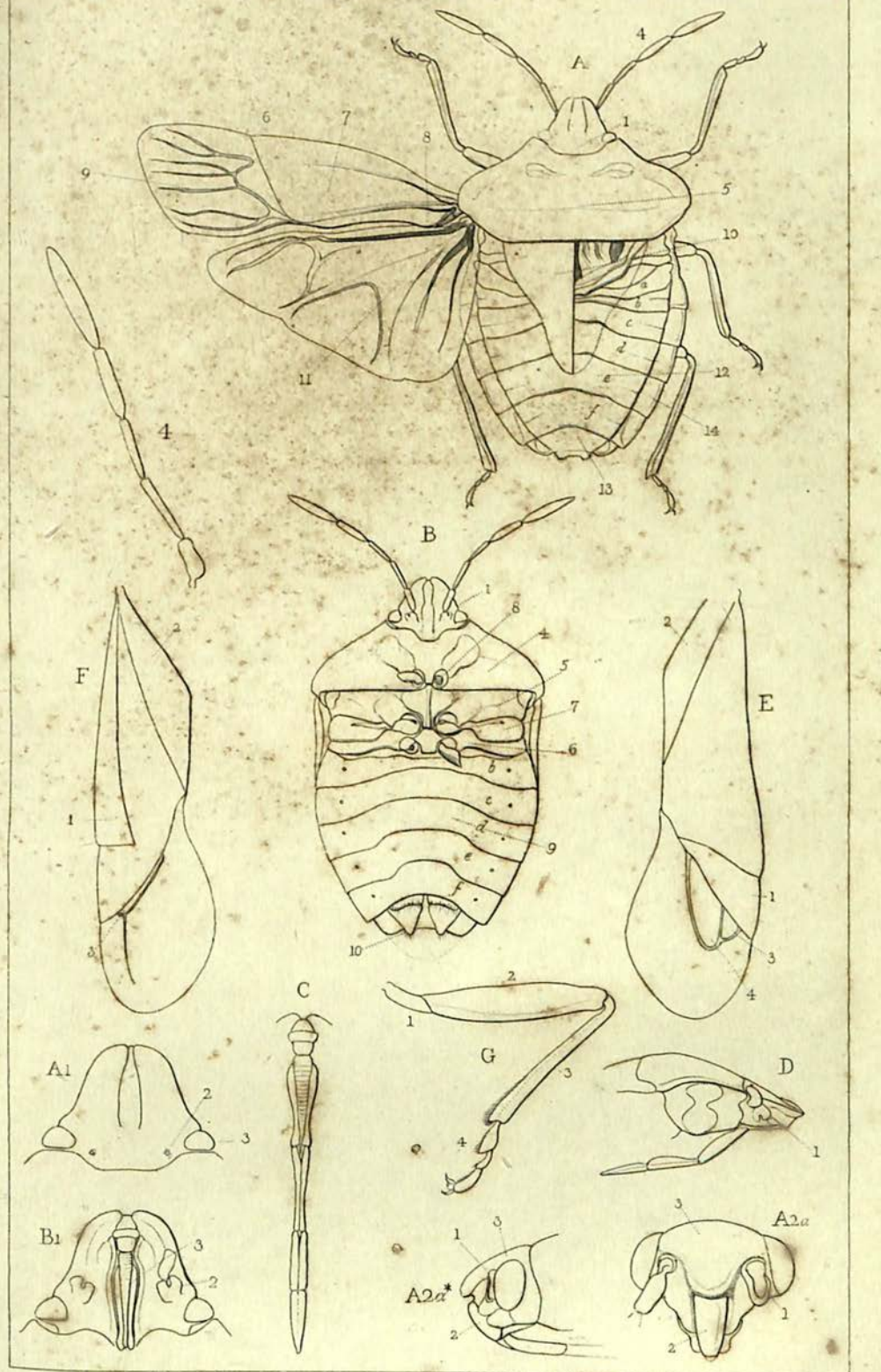
Fig. C. Rostrum.

Fig. D. Head (*Scutatina*) in profile; 1, the antenniferous tubercle.

Fig. E. Elytron (*Capsina*); 1, cuneus; 2, clavus; 3, inner cell, and 4, outer cell, of the membrane.

Fig. F. Elytron (*Anthocorina*); 1, embolium; 2, clavus; 3, cell of the membrane.

Fig. G. Leg; 1, fulcrum; 2, thigh; 3, tibia; 4, tarsus of 3 joints, the last bearing the claws and pulvilli.



E.W. Robinson. Del. et Sc. 1864.

PLATE 2.

GEODROMICA.

SECTION 1.—*SCUTATINA.*

FAMILY 1.—CYNIDÆ.

Genus 1. SEHIRUS (p. 51). Fig. 1, *S. morio* (p. 55); 1*a*, antenna; 1*b*, head underside, and rostrum; 1*c*, underside; 1*d*, head in profile and beneath (section); 1*e*, hind leg.

FAMILY 2.—ODONTOSCELIDÆ.

Genus 1. CORIMELÆNA (p. 58). Fig. 2, *Scarabæoides* (p. 58); 2*a*, antenna; 2*b*, rostrum; 2*c*, underside; 2*e*, hind leg.

Genus 2. ODONTOSCELIS (p. 59). Fig. 3, *O. fuliginosus* (p. 60); 3*a*, antenna; 3*b*, head underside. and rostrum; 3*c*, underside; 3*d*, head in profile; 3*e*, hind leg.

FAMILY 3.—SCIOCORIDÆ.

Genus 1. SCIOCORIS (p. 61). Fig. 4, *S. terreus* (p. 62); 4*a*, antenna; 4*b*, head underside, and rostrum; 4*c*, underside; 4*d*, head in profile; 4*e*, hind leg.

FAMILY 4.—EURYGASTRIDÆ.

Genus 1. EURYGASTER (p. 64). Fig. 5, *E. maurus* (p. 65); 5*a*, antenna; 5*b*, head underside, and rostrum; 5*c*, underside; 5*e*, hind leg; 5*f*, elytron.

FAMILY 5.—ÆLIIDÆ.

Genus 1. ÆLIA (p. 68). Fig. 6, *Æ. acuminata* (p. 68); 6*a*, antenna; 6*b*, head underside, and rostrum; 6*c*, underside; 6*d*, head in profile.

Genus 2. ÆLIOIDES (p. 70). Fig. 7, *Æ. inflexa* (p. 71); 7*a*, antenna; 7*b*, head underside, and rostrum; 7*c*, underside; 7*d*, head in profile.

FAMILY 6.—PODOPIDÆ.

Genus 1. PODOPS (p. 72). Fig. 8, *P. inunctus;* 8*a*, antenna; 8*b*, head underside, and rostrum; 8*c*, underside; 8*d*, anterior process of pronotum; 8*e*, hind leg.

FAMILY 7.—PENTATOMIDÆ.

Genus 1. EYSARCORIS (p. 74). Fig. 9, *E. melanocephalus;* 9*a*, antenna; 9*b*, head underside, and rostrum; 9*c*, underside; 9*d*, anterior angle of pronotum; 9*e*, hind leg.

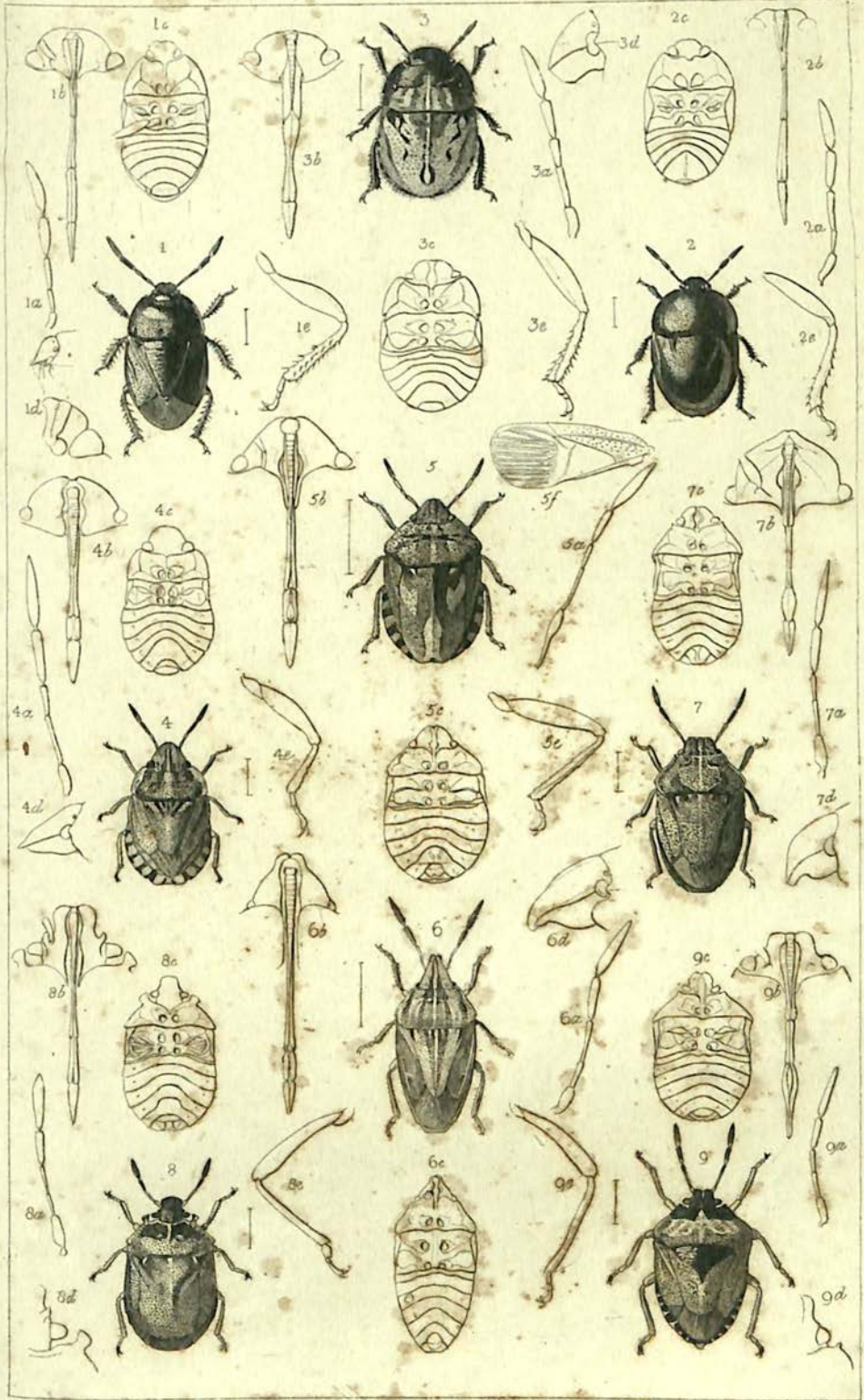


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PLATE 3.

SECTION 1.—*SCUTATINA* (*continued*).

FAMILY 7.—PENTATOMIDÆ (*continued*).

Genus 2. PENTATOMA (p. 77). Fig. 1, *P. dissimile* (p. 83); 1*a*, antenna; 1*b*, head underside, and rostrum; 1*c*, underside; 1*f*, elytron and wing.

Genus 3. STRACHIA (p. 81). Fig. 2, *S. oleracea* (p. 86); 2*b*, head underside, and rostrum; 2*c*, underside.

FAMILY 8.—ASOPIDÆ.

Genus 1. ZICRONA (p. 88). Fig. 3, *Z. cærulea* (p. 88); 3*b*, head underside, and rostrum; 3*c*, underside.

Genus 2. JALLA (p. 89). Fig. 4, *J. dumosa* (p. 90); 4*a*, fore tibia; 4*b*, head underside, and rostrum; 4*c*, underside.

Genus 3. RHACOGNATHUS (p. 91). Fig. 5, *R. punctatus* (p. 92); 5*b*, head underside, and rostrum; 5*c*, underside.

Genus 4. ASOPUS (p. 93). Fig. 6, *A. luridus* (p. 94); 6*b*, head underside, and rostrum; 6*c*, underside.

Genus 5. PICROMERUS (p. 95). Fig. 7, *P. bidens* (p. 96); 7*b*, head underside, and rostrum; 7*c*, underside.

FAMILY 9.—RAPHIGASTRIDÆ.

Genus 1. TROPICORIS (p. 97). Fig. 8, *T. rufipes* (p. 98); 8*b*, head in profile, and rostrum; 8*c*, underside; 8*e*, sternum.

Genus 2. PIEZODORUS (p. 99). Fig. 9, *P. purpureipennis* (p. 100); 9*b*, head underside, and rostrum; 9*c*, side view.

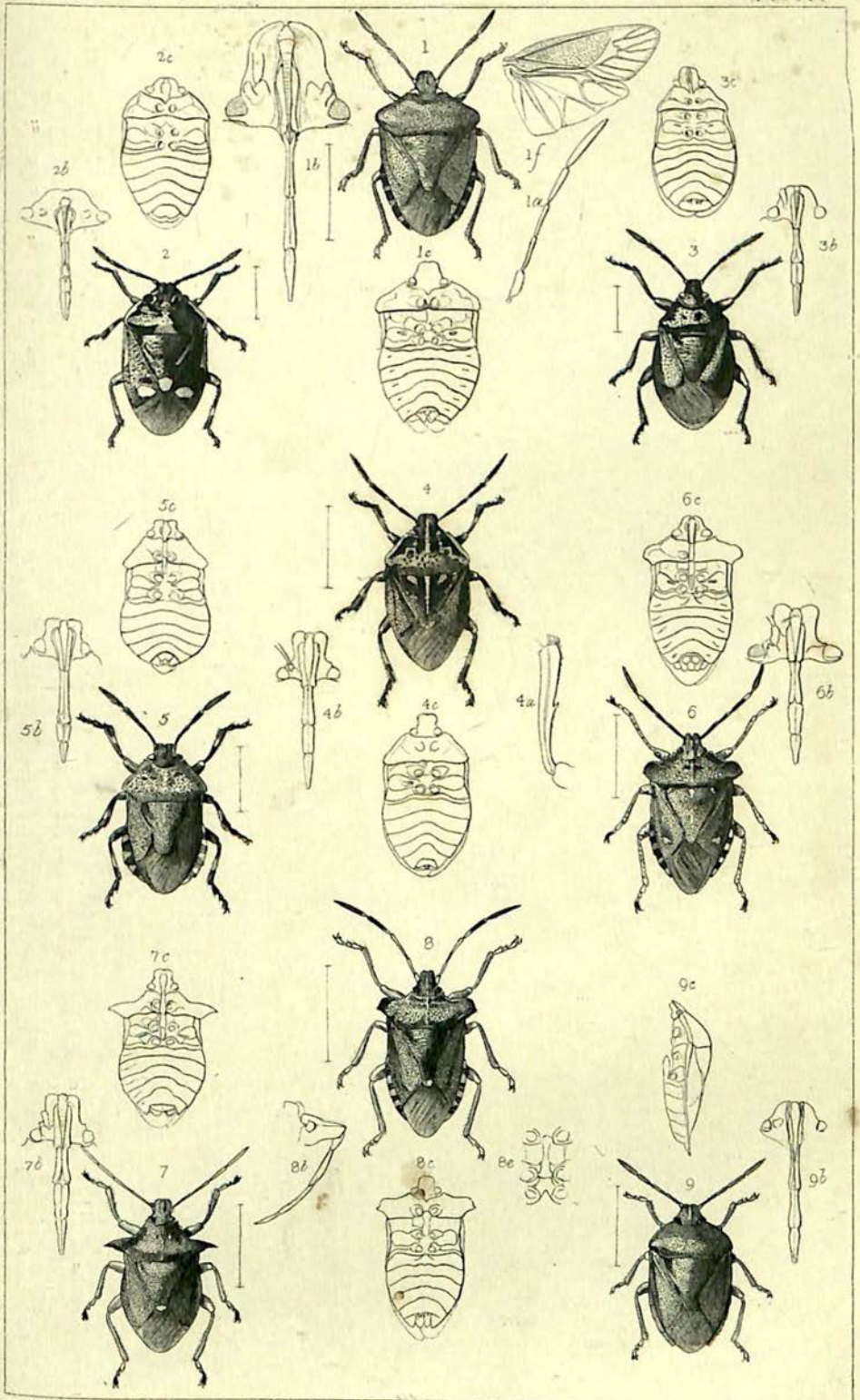

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PLATE 4.

SECTION 1.—*SCUTATINA* (*continued*).

FAMILY 9.—RAPHIGASTRIDÆ (*continued*).

Genus 3. ACANTHOSOMA (p. 100). Fig. 1, *A. hæmorrhoidale* (p. 107); 1*a*, underside; 1*b*, side view; 1*c*, hinder tibia and tarsus; 1*d*, rostrum; 1*e*, elytron and wing.

Fig. 2, *A.* (*Cyphostethus*) *pictum* (p. 105); 2*a*, rostrum; 2*b*, underside; 2*c*, side view.

SECTION 2.—*COREINA*.

FAMILY 1.—COREIDÆ.

Genus 1. SYROMASTES (p. 109). Fig. 3, *S. marginatus* (p. 110); 3*a*, head underside, and rostrum; 3*b*, underside; 3*c*, genital segments, ♂ and ♀.

Genus 2. ENOPLOPS (p. 111). Fig. 4, *E. Scapha* (p. 112); 4*a*, front of head and base of antennæ; 4*b*, side view.

Genus 3. GONOCERUS (p. 113). Fig. 5, *G. venator* (p. 114).

Genus 4. VERLUSIA (p. 115). Fig. 6, *V. rhombea* (p. 116); 6*a*, head underside, and rostrum; 6*b*, underside.

Genus 5. COREUS (p. 117). Fig. 7, *C. hirticornis* (p. 118); 7*a*, antenna; 7*b*, underside; 7*c*, hinder thigh; 7*d*, genital segments underside ♀; 7*d**, ditto ♂.

Genus 6. SPATHOCERA (p. 120). Fig. 8, *S. Dalmani* (p. 122); 8*a*, antenna; 8*b*, side view.

Genus 7. PSEUDOPHLŒUS (p. 123). Fig. 9, *P. Fallèni* (p. 124); 9*f*, elytron.

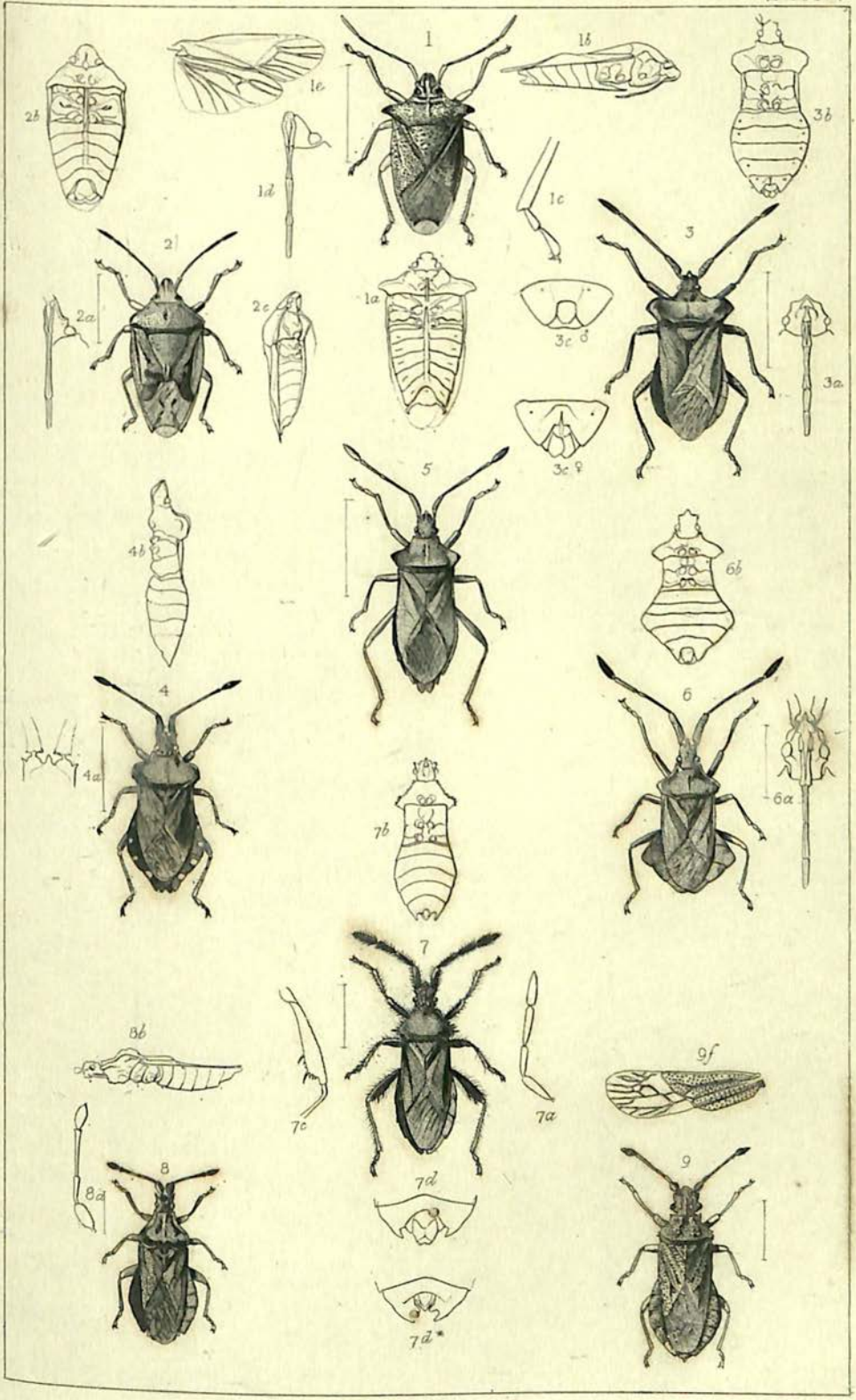

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PLATE 5.

SECTION 2.—*COREINA* (*continued*).

FAMILY 1.—COREIDÆ (*continued*).

Genus 8. CERALEPTUS (p. 126). Fig. 1, *C. squalidus* (p. 127).

FAMILY 2.—CORIZIDÆ.

Genus 1. THERAPHA (p. 123). Fig. 2, *T. Hyoscyami* (p. 129); 2*a*, underside; 2*b*, elytron and wing.

Genus 2. CORIZUS (p. 130). Fig. 3, *C. capitatus* (p. 133); 3*a*, elytron.

Genus 3. MYRMUS (p. 136). Fig. 4, *M. Miriformis* (p. 137); 4*a*, undeveloped form of elytra.

FAMILY 3.—CHOROSOMIDÆ.

Genus 1. CHOROSOMA (p. 138). Fig. 5, *C. Schillingi* (p. 139).

FAMILY 4.—STENOCEPHALIDÆ.

Genus 1. STENOCEPHALUS (p. 140). Fig. 6, *S. agilis* (p. 141); 6*a* antenna; 6*b*, rostrum; 6*c*, underside.

FAMILY 5.—ALYDIDÆ.

Genus 1. ALYDUS (p. 142). Fig. 7, *A. calcaratus* (p. 143); 7*a*, antenna; 7*b*, head underside, and rostrum; 7*c*, underside; 7*d*, hinder thigh.

SECTION 3.—*BERYTINA*.

FAMILY 1.—METACANTHIDÆ.

Genus 1. METACANTHUS (p. 145). Fig. 8, *M. punctipes* (p. 146); 8*a*, side view.

Genus 2. METATROPIS (p. 147). Fig. 9, *M. rufescens* (p. 148); 9*a*, side view.

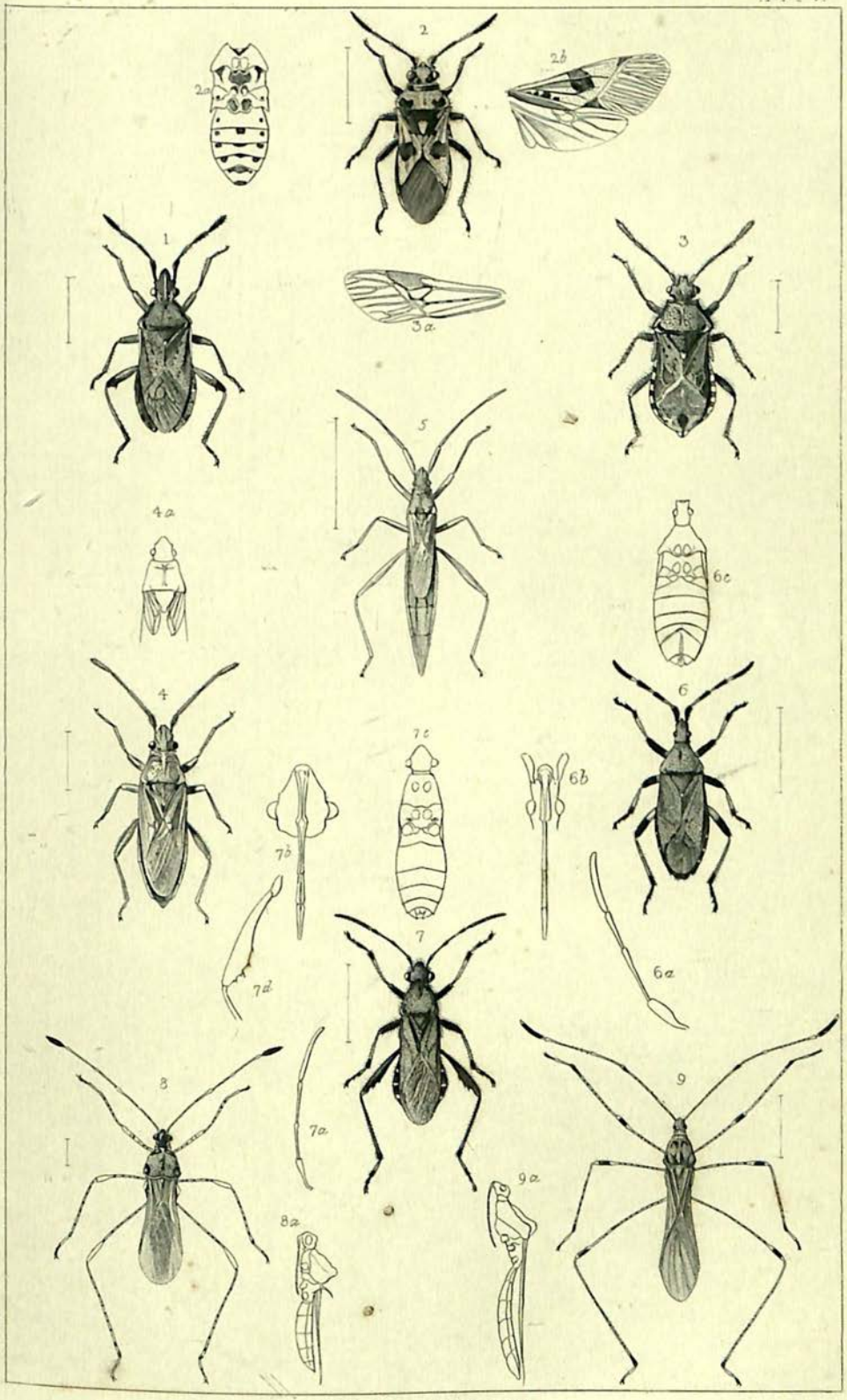

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PLATE 6.

SECTION 3.—*BERYTINA* (*continued*).

FAMILY 2.—BERYTIDÆ.

Genus 1. BERYTUS (p. 149). Fig. 1, *B. minor* (p. 157); 1*a*, clytron.
Genus 2. NEIDES (p. 160). Fig. 2, *N. depressus* (p. 161); 2*a*, clytron.

SECTION 4.—*CŒCIGENINA*.

FAMILY 1.—PYRRHOCORIDÆ.

Genus 1. PYRRHOCORIS (p. 163). Fig. 3, *P. apterus* (p. 164); 3*b*, side view.

SECTION 5.—*LYGÆINA*.

FAMILY 1.—RHYPAROCHROMIDÆ.

Genus 1. GASTRODES (p. 165). Fig. 4, *G. ferrugineus* (p. 168); 4*a*, fore leg; 4*b*, hinder tarsus.
Genus 2. PLOCIOMERUS (p. 169). Fig. 5, *P. fracticollis* (p. 170); 5*a*, fore leg; 5*b*, hinder tarsus.
Genus 3. CALYPTONOTUS (p. 171). Fig. 6, *C. Pini* (p. 173); 6*a*, fore leg.
Genus 4. EREMOCORIS (p. 176). Fig. 7, *E. erraticus* (p. 177); 7*a*, fore leg.
Genus 5. DIEUCHES (p. 179). Fig. 8, *D. luscus* (p. 180).
Genus 6. SCOLOPOSTETHUS (p. 181). Fig. 9, *S. adjunctus* (p. 183); 9*a*, fore leg.

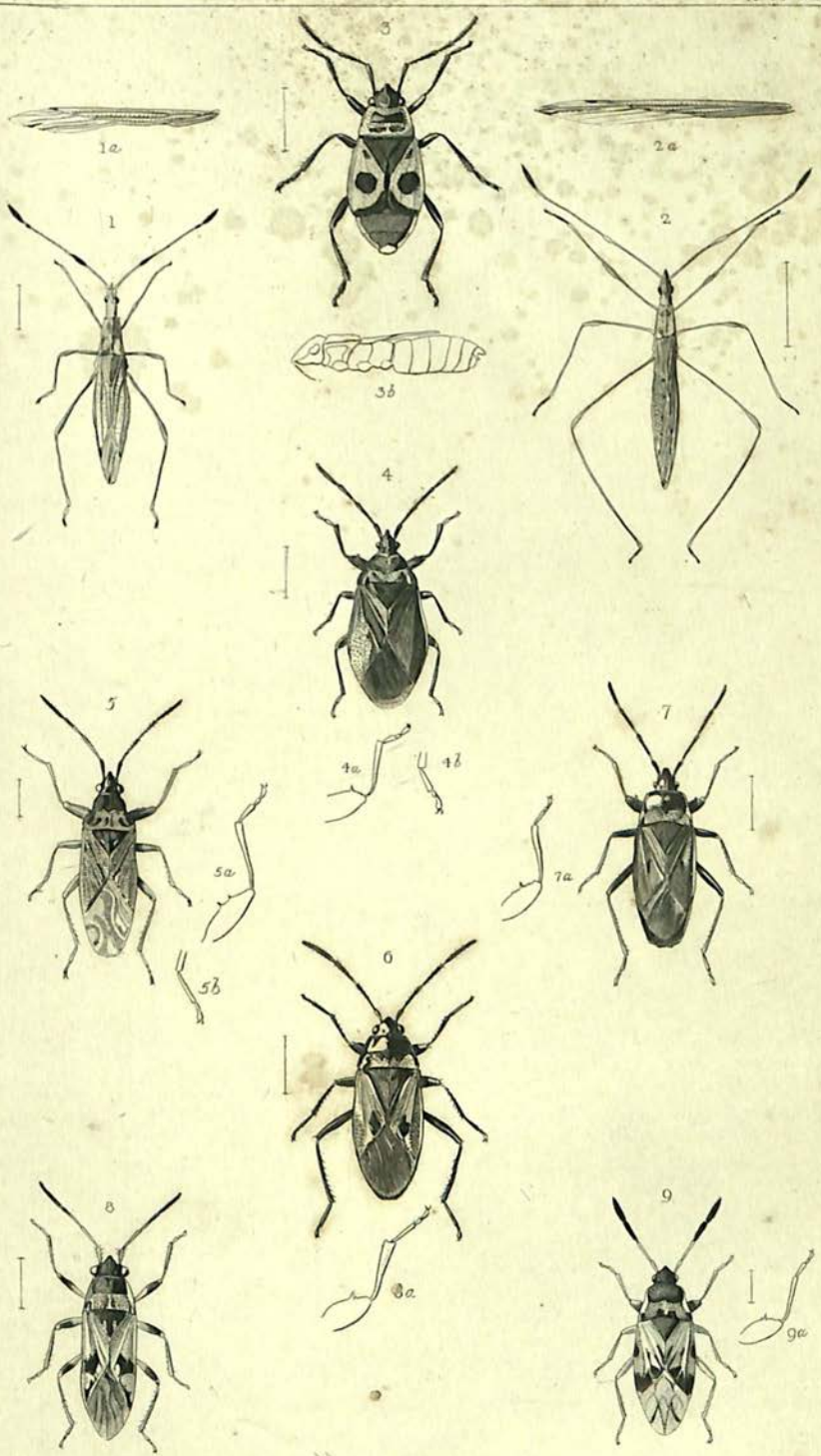

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PLATE 7.

SECTION 5.—*LYGÆINA* (*continued*).

FAMILY 1.—RHYPAROCHROMIDÆ (*continued*).

Genus 7. PERITRECHUS (p. 187). Fig. 1, *P. luniger* (p. 188), and fore and hinder tarsus.

Genus 8. TRAPEZONOTUS (p. 190). Fig. 2, *T. agrestis* (p. 192), and fore leg.

Genus 9. PIONOSOMUS (p. 194). Fig. 3, *P. varius* (p. 195).

Genus 10. DRYMUS (p. 196). Fig. 4, *D. brunneus* (p. 198), and fore leg.

Genus 11. TROPISTETHUS (p. 200). Fig. 5, *T. holosericeus* (p. 200), fore leg.

Genus 12. RHYPAROCHROMUS (p. 201). Fig. 6, *R. dilatatus* (p. 204), and fore leg and hinder tarsus; 6*a*, underside, ♀.

Genus 13. HYPNOPHILUS (p. 208). Fig. 7, *H. micropterus* (p. 208).

Genus 14. PLINTHISUS (p. 211). Fig. 8, *P. brevipennis* (p. 211).

Genus 15. STYGNOCORIS (p. 213). Fig. 9, *S. rusticus* (p. 214), and fore tarsus and hinder tarsus.

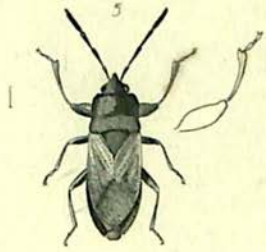

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PLATE 8.

Section 5.—*LYGÆINA* (*continued*).

Family 1.—RHYPAROCHROMIDÆ (*continued*).

Genus 16. Acompus (p. 217). Fig. 1, *A. rufipes* (p. 218).
Genus 17. Ischnodemus (p. 219). Fig. 2, *I. Sabuleti* (p. 220); 2*a*, undeveloped form of elytra; 2*b*, underside, ♀.

Family 2.—PHYGADICIDÆ.

Genus 1. Phygadicus (p. 221). Fig. 3, *P. Urticæ* (p. 222); 3*a*, underside, ♀; 3*b*, elytron; fore leg.
Genus 2. Nysius (p. 225). Fig. 4, *N. Thymi* (p. 226).

Family 3.—HENESTARIDÆ.

Genus 1. Henestaris (p. 227). Fig. 5, *H. laticeps* (p. 229).

Family 4.—CYMIDÆ.

Genus 1. Chilacis (p. 230). Fig. 6, *C. Typhæ* (p. 231); 6*a*, elytron; 6*b*, head in profile.
Genus 2. Ischnorhynchus (p. 232). Fig. 7, *I. Resedæ* (p. 233).
Genus 3. Cymus (p. 234). Fig. 8, *C. claviculus* (p. 235).

Family 5.—ZOSMERIDÆ.

Genus 1. Zosmerus (p. 237). Fig. 9, *Z. quadratus* (p. 238).

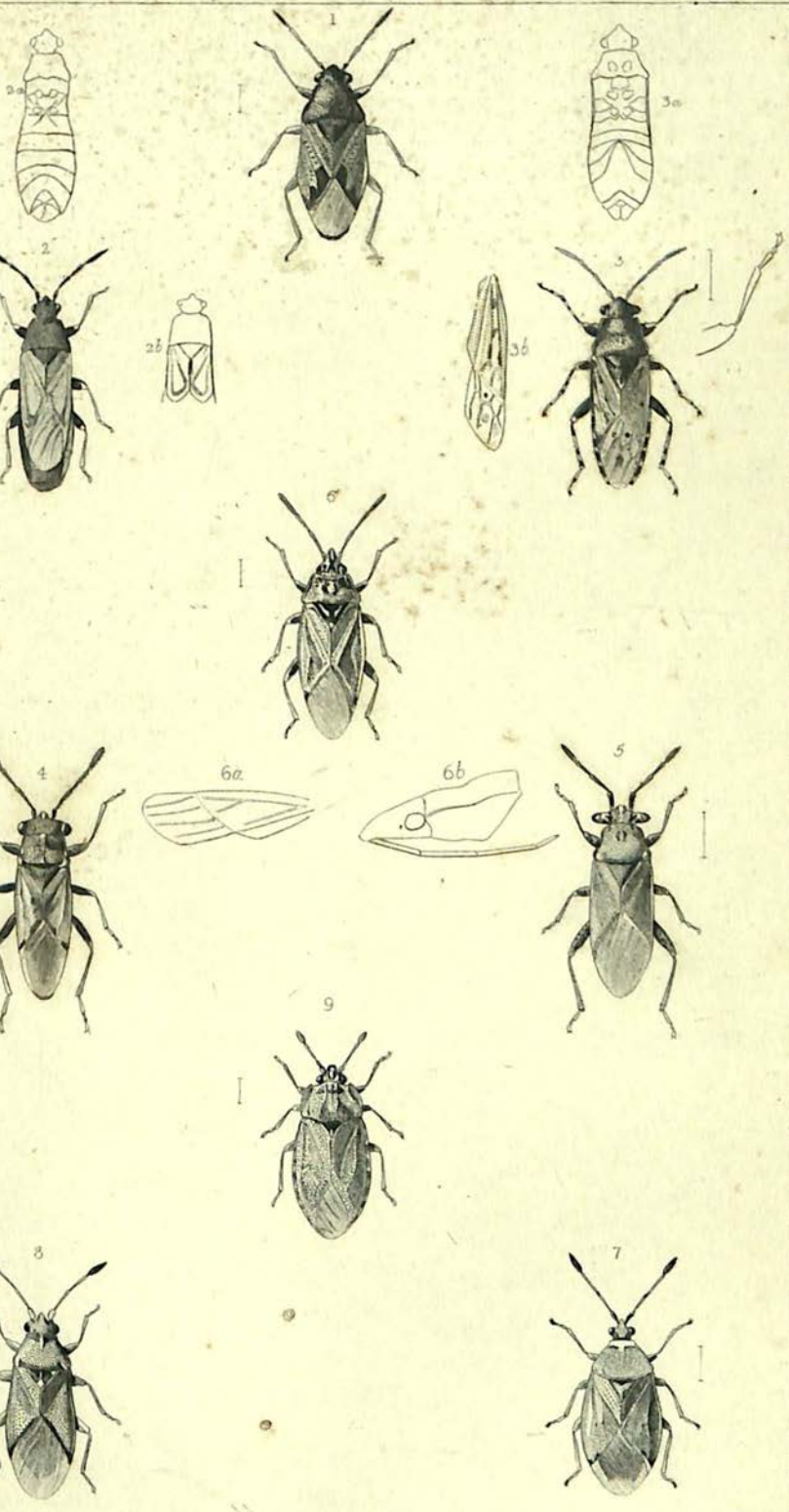

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PLATE 9.

SECTION 6.—*TINGIDINA.*

FAMILY 1.—AGRAMMIDÆ.

Genus 1. AGRAMMA (p. 242). Fig. 1, *A. læta* (p. 242).

FAMILY 2.—TINGIDIDÆ.

Genus 1. MONANTHIA (p. 243). Fig. 2, *M. dumetorum* (p. 246); 2*a*, underside, ♀; 2*b*, genital segments, ♂. Fig. 3, *M. ampliata* (p. 252).
Genus 2. DERephysia (p. 253). Fig. 4, *D. foliacea* (p. 254).
Genus 3. DICTYONOTA (p. 255). Fig. 5, *D. crassicornis* (p. 255).
Genus 4. CAMPYLOSTIRA (p. 257). Fig. 6, *C. brachycera* (p. 259).
Genus 5. ORTHOSTIRA (p. 260). Fig. 7, *O. cervina* (p. 262).

SECTION 7.—*HEBRINA.*

(See Plate 19.)

SECTION 8.—*CORTICICOLINA.*

FAMILY 1.—ANEURIDÆ.

Genus 1. ANEURUS (p. 267). Fig. 8, *A. lævis* (p. 268); 8*a*, underside, ♂ and ♀; 8*b*, head in profile and antenna; 8*c*, head in front; 8*d*, fore tibia and tarsus; 8*e*, rostrum.

FAMILY 2.—ARADIDÆ.

Genus 1. ARADUS (p. 269). Fig. 9, *A. depressus* (p. 271); 9*a*, underside, ♂ and ♀; 9*b*, head in profile and antenna; 9*c*, leg and tarsus; 9*d*, rostrum.

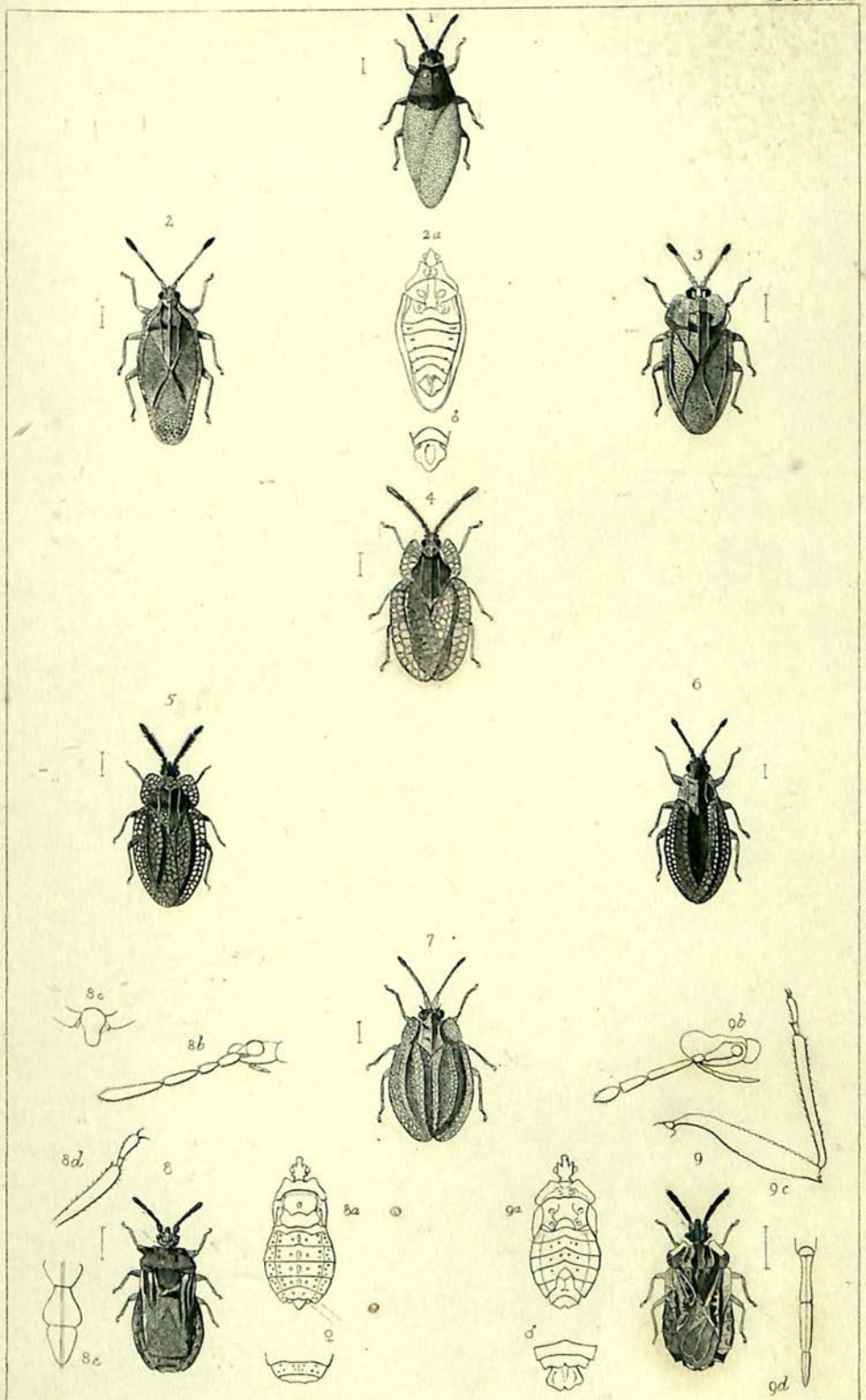

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PLATE 10.

SECTION 9.—*CAPSINA.*

FAMILY 1.—BRYOCORIDÆ.

Genus 1. BRYOCORIS (p. 276). Fig. 1, *B. Pteridis*, ♂, developed (p. 277); 1*, undeveloped; 1*a*, underside; 1*b*, elytron.

Genus 2. MONALOCORIS (p. 278). Fig. 2, *M. Filicis* (p. 279).

FAMILY 2.—PITHANIDÆ.

Genus 1. PITHANUS (p. 280). Fig. 3, *P. Märkeli*, developed (p. 281); 3*a*, undeveloped; 3*b*, side view of thorax, head, and rostrum.

FAMILY 3.—MIRIDÆ.

Genus 1. MIRIS (p. 282). Fig. 4, *M. lævigatus* (p. 284).

Genus 2. ACETROPIS (p. 290). Fig. 5, *A. seticulosa* (p. 291); 5*a*, elytron.

Genus 3. LOPOMORPHUS (p. 293). Fig. 6, *L. ferrugatus* (p. 295).

FAMILY 4.—PHYTOCORIDÆ.

Genus 1. MIRIDIUS (p. 299). Fig. 7, *M. quadrivirgatus* (p. 300).

Genus 2. PHYTOCORIS (p. 301). Fig. 8, *P. Tiliæ* (p. 303); 8*a*, underside; 8*b*, elytron.

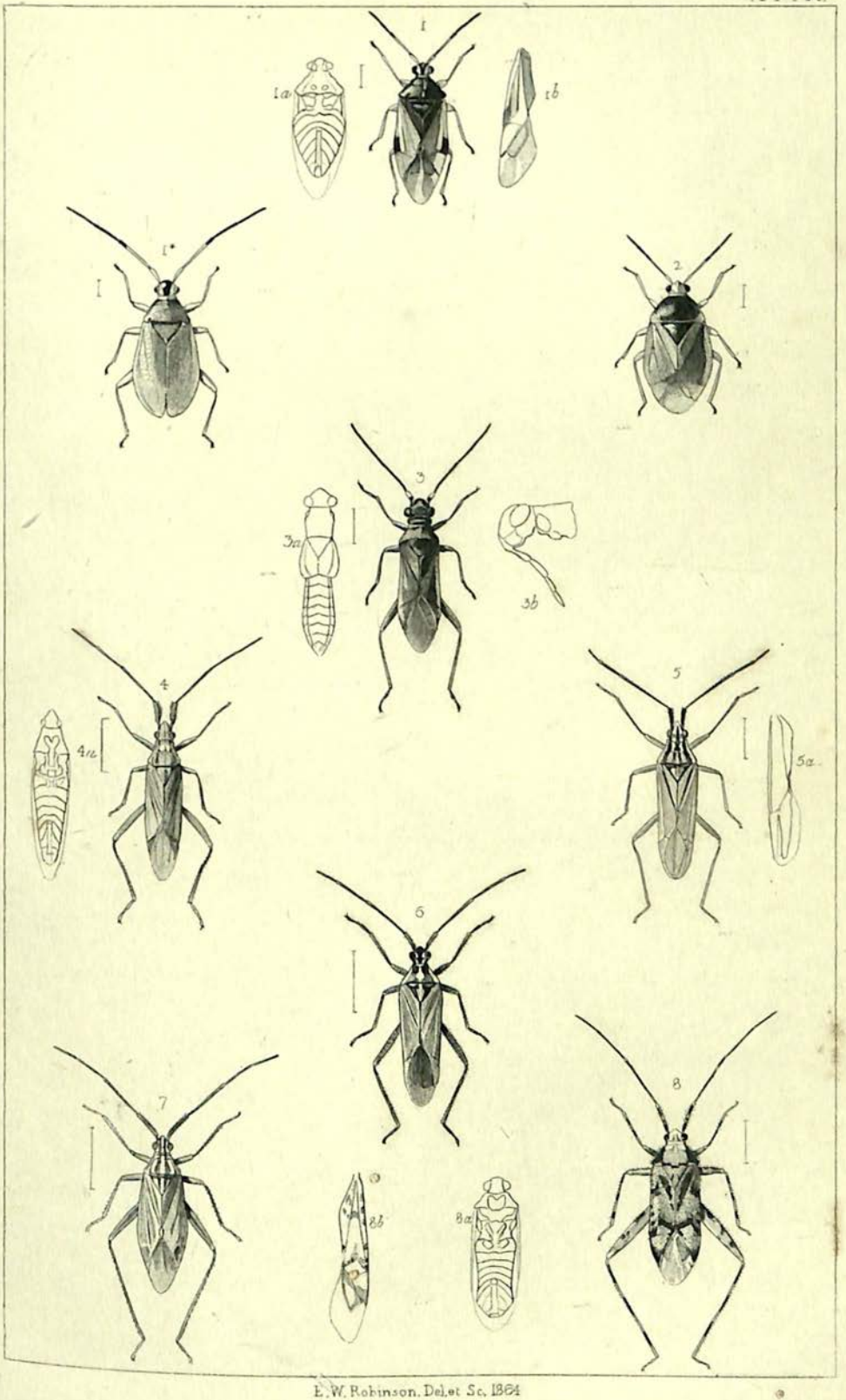

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PLATE 11.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 5.—DERÆOCORIDÆ.

Genus 1. DERÆOCORIS (p. 315). Fig. 1, *D. fulvomaculatus* (p. 316).
Genus 2. PANTILIUS (p. 332). Fig. 2, *P. tunicatus* (p. 333); 2*a*, underside.

FAMILY 6.—LITOSOMIDÆ.

Genus 1. LITOSOMA (p. 334). Fig. 3, *L. nassatus* (p. 337); 3*a*, elytron.

FAMILY 7.—PHYLIDÆ.

Genus 1. ÆTORHINUS (p. 346). Fig. 4, *Æ. angulatus* (p. 347).
Genus 2. SPHYRACEPHALUS (p. 348). Fig. 5, *S. ambulans*, ♂ and ♀ (pp. 349, 350).
Genus 3. BYRSOPTERA (p. 351). Fig. 6, *B. Caricis* (p. 352).
Genus 4. PHYLUS (p. 354). Fig. 7, *P. melanocephalus* (p. 355).

FAMILY 8.—CAMARONOTIDÆ.

Genus 1. CAMARONOTUS (p. 358). Fig. 8, *C. cinnamopterus* (p. 359); 8*a*, side view; 8*b*, hind leg.

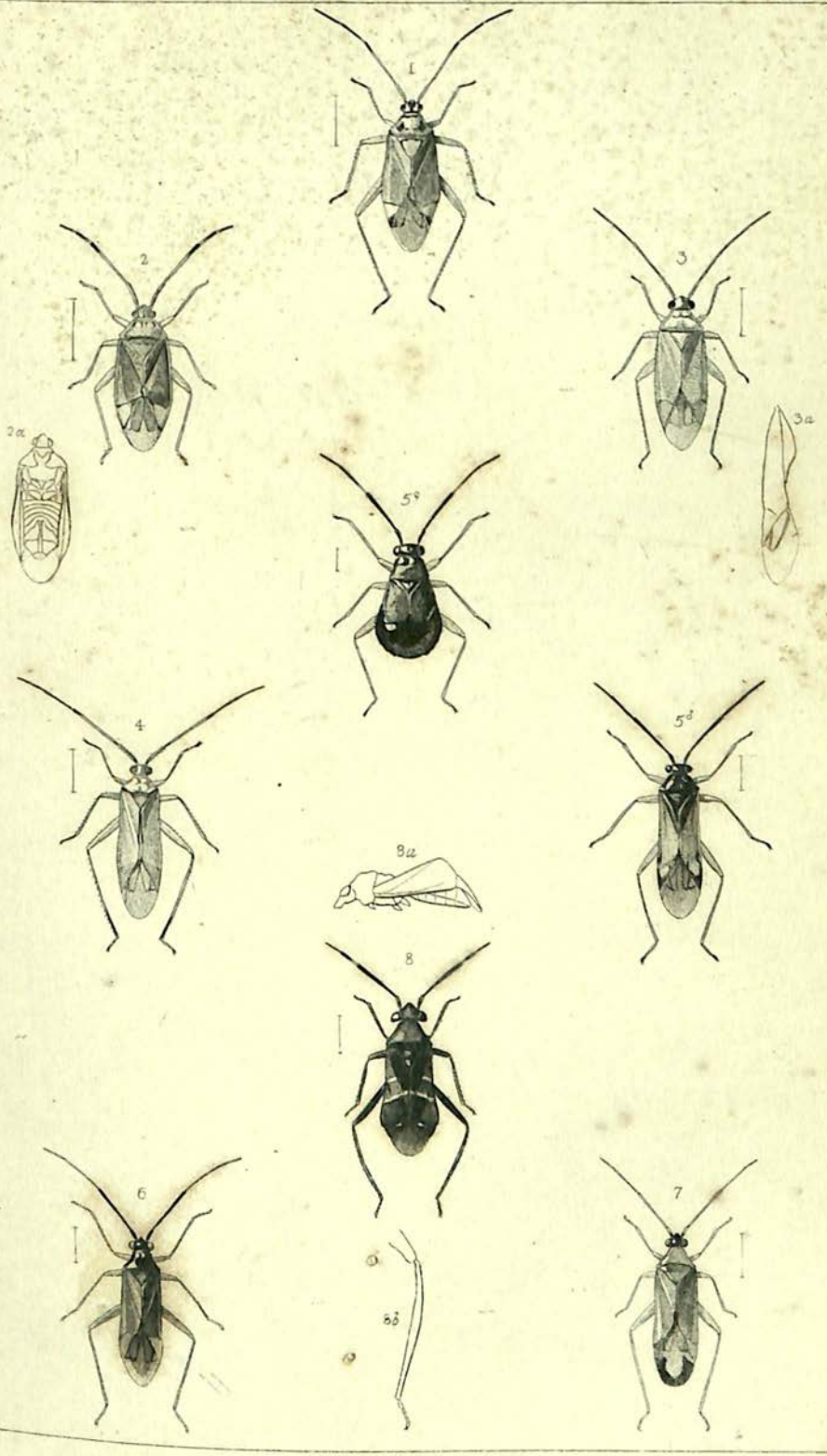

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PLATE 12.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 9.—GLOBICEPIDÆ.

Genus 1. GLOBICEPS (p. 312). Fig. 1, *G. flavonotatus* (p. 366).

FAMILY 10.—IDOLOCORIDÆ.

Genus 1. CYLLOCORIS (p. 367). Fig. 3, *C. histrionicus* (p. 368).
Genus 2. SYSTELLONOTUS (p. 369). Fig. 2, *S. triguttatus*, ♂ and ♀ (p. 370); 2*a*, underside.
Genus 3. CAMPYLONEURA (p. 372). Fig. 10, *C. virgula* (p. 373).
Genus 4. IDOLOCORIS (p. 374). Fig. 4, *I. errans* (p. 379); 5, *I. pallicornis* (p. 375).
Genus 5. MACROLOPHUS (p. 381). Fig. 6, *M. nubilus* (p. 382).
Genus 6. MALACOCORIS (p. 383). Fig. 7, *M. chlorizans* (p. 383).

FAMILY 11.—ONCOTYLIDÆ.

Genus 1. ANOTEROPS (p. 384). Fig. 8, *A. setulosus* (p. 385).
Genus 2. MACROCOLEUS (p. 386). Fig. 9, *M. molliculus* (p. 387).
Genus 3. AMBLYTYLUS (*see* Pl. 21).

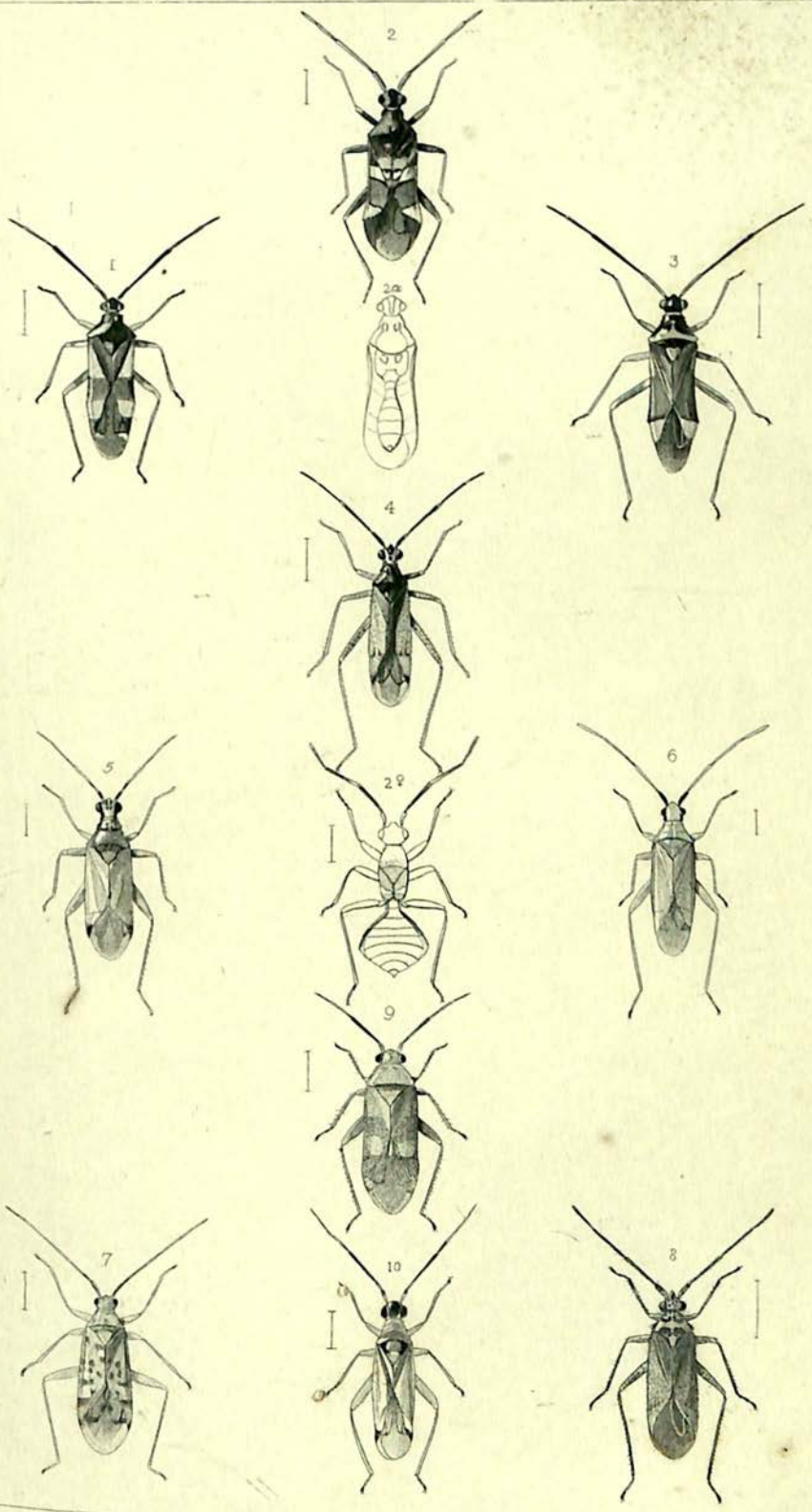

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PLATE 13.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 11.—ONCOTYLIDÆ (*continued*).

Genus 4. TINICEPHALUS (p. 390). Fig. 1, *T. obsoletus* (p. 391).
Genus 5. ONCOTYLUS (p. 392). Fig. 2, *O. decolor* (p. 393).
Genus 6. HOPLOMACHUS (p. 395). Fig. 3, *H. Thunbergii* (p. 396).
Genus 7. CONOSTETHUS (p. 397). Fig. 4, *C. roseus* (p. 398).

FAMILY 12.—PSALLIDÆ.

Genus 1. PLAGIOGNATHUS (p. 400). Fig. 5, *P. arbustorum* (p. 402).
Genus 2. APOCREMNUS (p. 403). Fig. 8, *A. Quercus* (p. 409).
Genus 3. PSALLUS (410). Fig. 7, *P. varians* (p. 418).
Genus 4. STHENARUS (p. 421). Fig. 6, *S. Rotermundi* (p. 422).

FAMILY 13.—CAPSIDÆ.

Genus 1. NEOCORIS (p. 423). Fig. 9, *N. Bohemanni* (p. 424).

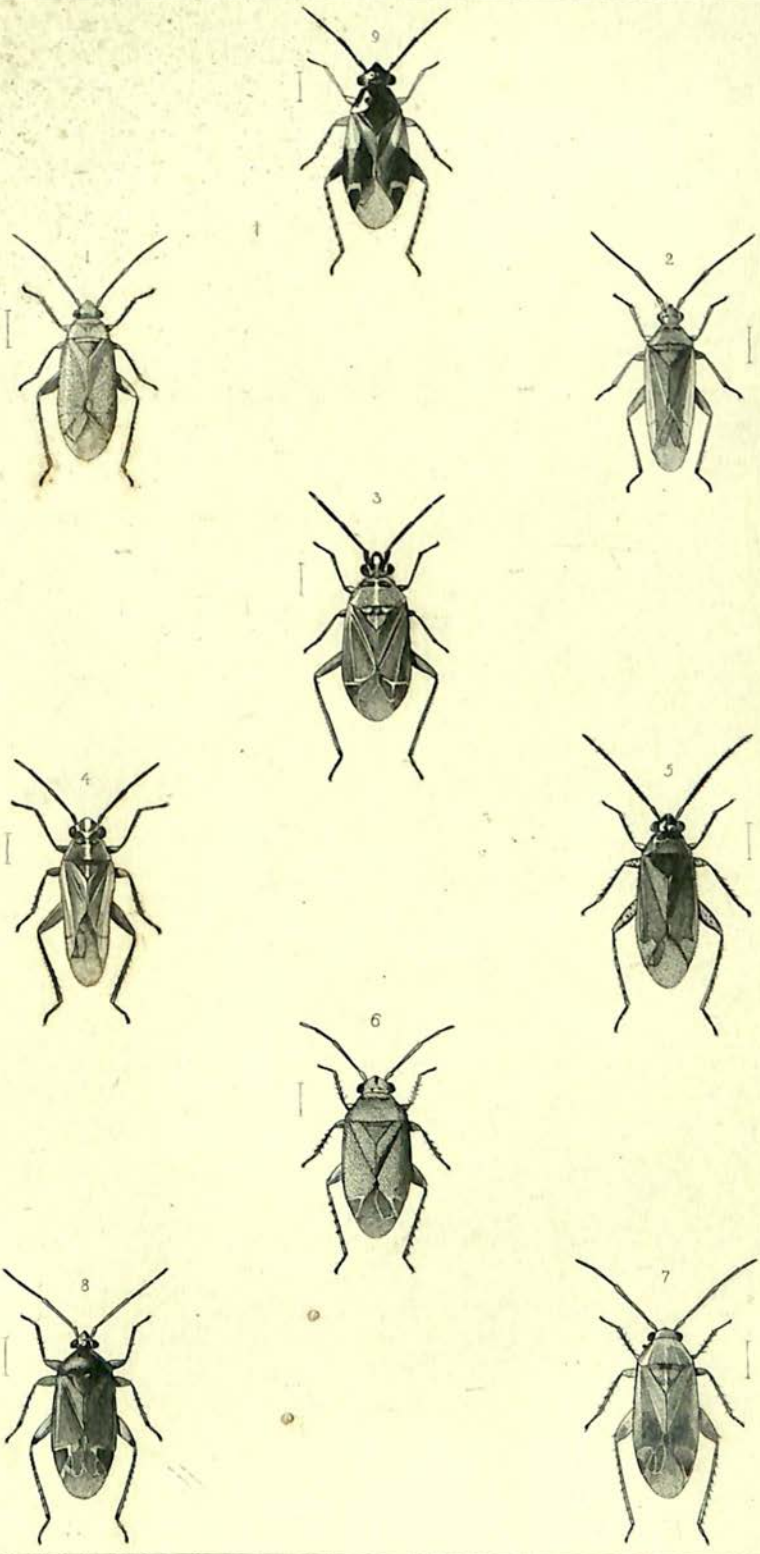

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PLATE 14.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 13.—CAPSIDÆ (*continued*).

Genus 2. AGALLIASTES (p. 426). Fig. 1, *A. pulicarius* (p. 427); 1*a*, *A. saltitans*, undeveloped (p. 428).
Genus 3. ORTHOCEPHALUS (p. 429). Fig. 2, *O. saltator* (p. 431).
Genus 4. HETEROCORDYLUS (p. 432). Fig. 3, *H. leptocerus* (p. 433).
Genus 5. ATRACTOTOMUS (p. 434). Fig. 4, *A. magnicornis* (p. 435).
Genus 6. HETEROTOMA (p. 437). Fig. 5, *H. merioptera* (p. 438).
Genus 7. RHOPALOTOMUS (p. 439). Fig. 7, *R. ater* (p. 440).
Genus 8. CAPSUS (p. 441). Fig. 8, *C. capillaris* (p. 442).
Genus 9. SYSTRATIOTUS (p. 443). Fig. 9, *S. nigritus* (p. 444).

FAMILY 16.—EROTICORIDÆ.

Genus 1. EROTICORIS (p. 471). Fig. 6, *E. rufescens* (p. 472).

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PLATE 15.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 14.—LYGIDÆ.

Genus 1. CHARAGOCHILUS (p. 445). Fig. 1, *C. Gyllenhalii* (p. 446).
Genus 2. CAMPTOBROCHIS (p. 447). Fig. 9, *C. punctulatus* (p. 448).
Genus 3. LIOCORIS (p. 449). Fig. 4, *L. tripustulatus* (p. 450).
Genus 4. ORTHOPS (p. 451). Fig. 5, *O. Pastinacæ* (p. 455); 5*a*, elytron of *O. Kalmii* (p. 452).
Genus 5. LYGUS (p. 456). Fig. 2, *L. pratensis* (p. 464).
Genus 6. PŒCILOSCYTUS (p. 466). Fig. 6, *P. unifasciatus* (p. 467).

FAMILY 15.—HARPOCERIDÆ.

Genus 1. HARPOCERA (p. 468). Fig. 3, *H. thoracica* (p. 469); 3*a*, antenna of ♂ and ♀; 3*b*, hind leg.

FAMILY 17.—LOPIDÆ.

Genus 1. LOPUS (p. 474). Fig. 7, *L. Miles* (p. 476).

FAMILY 18.—DICHROOSCYTIDÆ.

Genus 1. DICHROOSCYTUS (p. 477). Fig. 8, *D. rufipennis* (p. 478).

FAMILY 19.—HALTICOCORIDÆ.

Genus 1. HALTICOCORIS (*see* Pl. 21).

FAMILY 20.—STIPHROSOMIDÆ.

Genus 1. STIPHROSOMA (*see* Pl. 21).

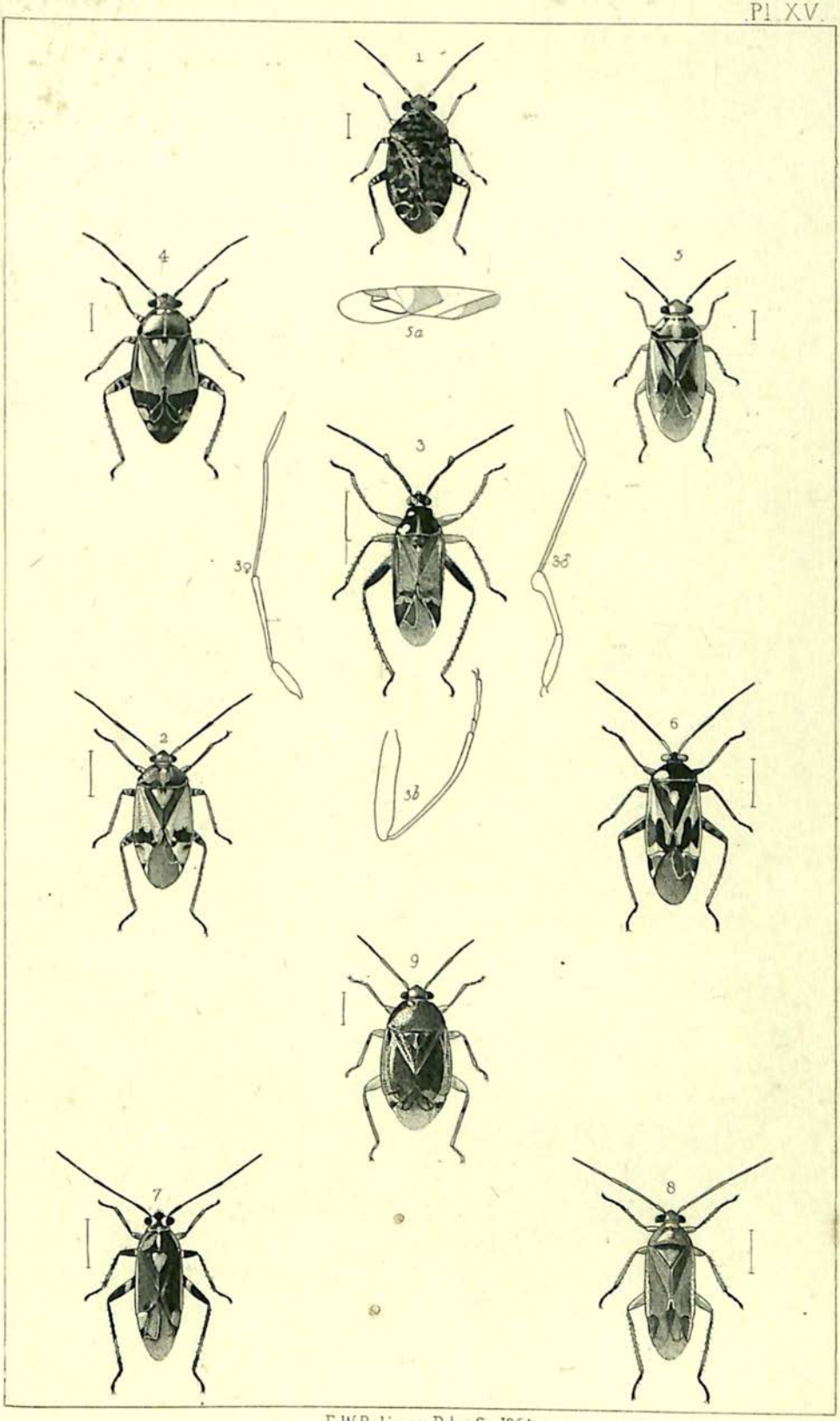

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PLATE 16.

SECTION 10.—*ANTHOCORINA.*

FAMILY 1.—MICROPHYSIDÆ.

Genus 1. MYRMEDOBIA (p. 483). Fig. 1 ♂, *M. coleopirata*, ♂ (p. 484); 1*a*, head, pronotum and scutellum; 1*b*, elytron and wing; 1*c*, head in profile; 1*d*, hinder tarsus.

Fig. 1 ♀, idem ♀; 1*a*, head; 1*b*, hinder tarsus; 1*c*, head in profile.

Genus 2. ZYGONOTUS (p. 486). Fig. 2 ♂, *Z. elegantulus*, ♂ (p. 488); 2*a*, head and pronotum; 2*b*, elytron and wing; 2*c*, head in profile.

Fig. 2 ♀, idem ♀.

Fig. 3 ♂, *Z. Pselaphiformis*, ♂ (p. 487); 3 ♀, idem ♀.

FAMILY 2.—ANTHOCORIDÆ.

Genus 1. TETRAPHLEPS (p. 490). Fig. 4, *T. vittatus*, ♂ (p. 491); 4*a*, head and antenna; 4*b*, elytron and wing; 4*c*, head in profile; 4*d*, hinder tarsus.

Genus 2. TEMNOSTETHUS (p. 491). Fig. 5, *T. lucorum* (p. 492); 5*a*, head and antenna; 5*a**, head in profile; 5*b*, elytron; 5*b**, wing.

Genus 3. ANTHOCORIS (p. 494). Fig. 6, *A. nemorum* (p. 495); 6*a*, head and antenna; 6*b*, elytron and wing; 6*c*, head in profile; 6*d*, hinder tarsus.

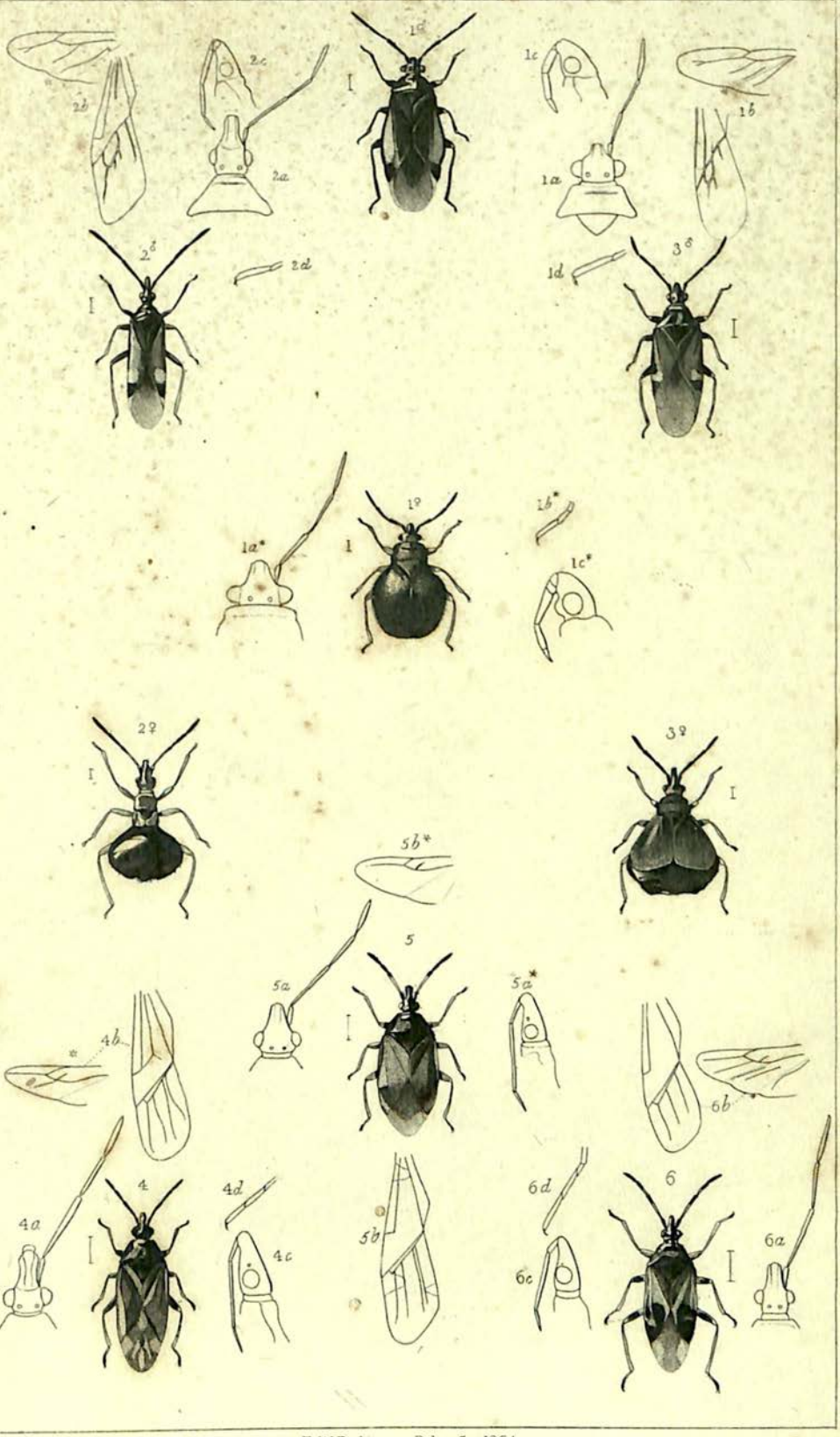

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PLATE 17.

Section 10.—*ANTHOCORINA* (*continued*).

Family 2.—ANTHOCORIDÆ (*continued*).

Genus 4. Lyctocoris (p. 498). Fig. 1, *L. domesticus* (p. 499); 1*a*, head and antenna; 1*b*, elytron and wing; 1*c*, head in profile; 1*d*, underside, ♀.

Genus 5. Piezostethus (p. 500). Fig. 2, *P. galactinus* (p. 500); 2*a*, head and antenna; 2*b*, elytron; 2*c*, hind leg; 2*d*, head in profile; 2*e*, underside, ♀.

Genus 6. Triphleps (p. 503). Fig. 3, *T. minutus* (p. 504); 3*a*, head, and antenna ♂ and ♀; 3*b*, elytron and wing; 3*c*, head in profile.

Genus 7. Brachysteles (p. 505). Fig. 4, *B. pilicornis* (p. 506); head and antennæ, pronotum and scutellum; 4*a*, elytron; 4*a**, wing; 4*b*, hinder tarsus; 4*c*, terminal segments; 4*d*, head in profile. (*See also* Pl. 21.)

Genus 8. Cardiastethus (p. 506). Fig. 5, *C. testaceus* (p. 507); 5*a*, head and antenna; 5*b*, elytron and wing; 5*c*, head in profile.

Genus 9. Xylocoris (p. 507). Fig. 6, *X. ater* (p. 508); 6*a*, head and antenna; 6*b*, elytron; 6*b**, wing; 6*c*, head in profile.

Family 3.—ACANTHIIDÆ.

Genus 1. Acanthia (p. 509). Fig. 7, *A. lectularia* (p. 510); 7*a*, antenna; 7*b*, elytron; 7*c*, hind leg and tarsus; 7*d*, rostrum, front and side view.

Family 4.—CERATOCOMBIDÆ.

Genus 1. Ceratocombus. (*See* Pl. 21.)

Genus 2. Dipsocoris (p. 514). Fig. 8, *D. alienum* (p. 515); 8*a*, head and antenna; 8*b*, elytron and wing; 8*c*, head in profile.

Section 11.—*OCULATINA*.

Family 1.—SALDIDÆ.

Genus 1. Salda (p. 516). Fig. 9, *S. pulchella* (p. 520); 9*a*, head in profile and antenna; 9*b*, membrane of elytron; 9*b**, wing; 9*c*, fore tarsus.

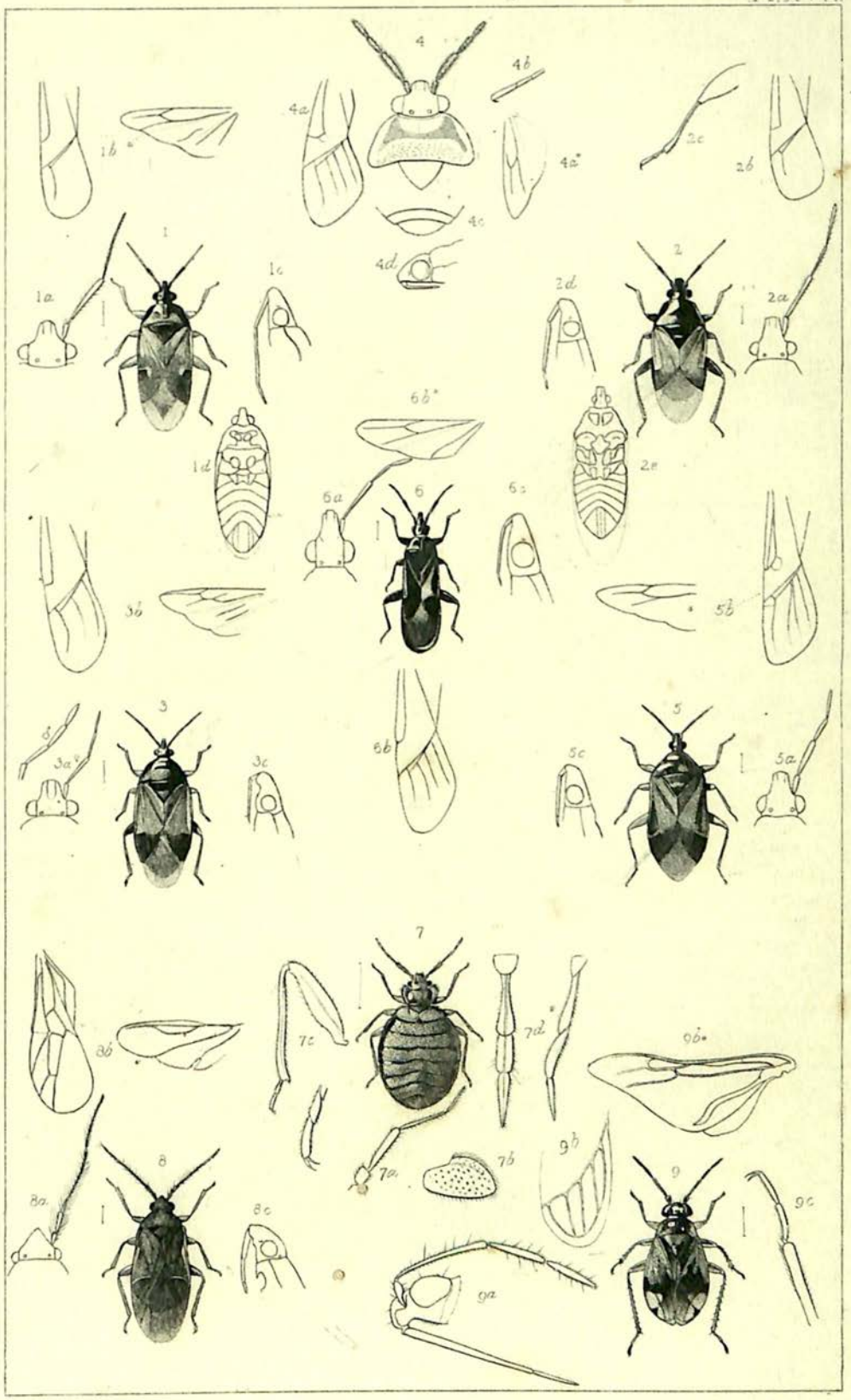

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PLATE 18.

SECTION 12.—*REDUVINA.*

FAMILY 1.—REDUVIDÆ.

Genus 1. PLOIARIA (p. 534). Fig. 1, *P. vagabunda* (p. 536); 1*a*, elytron.

Genus 2. PYGOLAMPIS (p. 538). Fig. 4, *P. bifurcata* (p. 539); 4*a*, head in profile and antennæ; 4*b*, elytron; 4*c*, underside.

Genus 3. CORANUS (p. 540). Fig. 2, *C. subapterus* (p. 541); 2*a*, fore leg; 2*b*, rostrum; 2*c*, elytron and wing; 2*d*, head in profile and antenna; 2*e*, head, pronotum, and scutellum, side view.

Genus 4. REDUVIUS (p. 542). Fig. 3, *R. personatus* (p. 544); 3*a*, head and antennæ; 3*b*, elytron; 3*c*, head in profile.

FAMILY 2.—NABIDÆ.

Genus 1. METASTEMMA (p. 545). Fig. 6, *M. guttula* (p. 546); 6*a*, head in profile and antenna; 6*b*, head in front and rostrum; 6*c*, fore leg.

Genus 2. NABIS (p. 547). Fig. 5, *N. flavomarginatus* (p. 554); 5*a*, head in profile and antenna; 5*b*, elytron; 5*c*, fore leg.

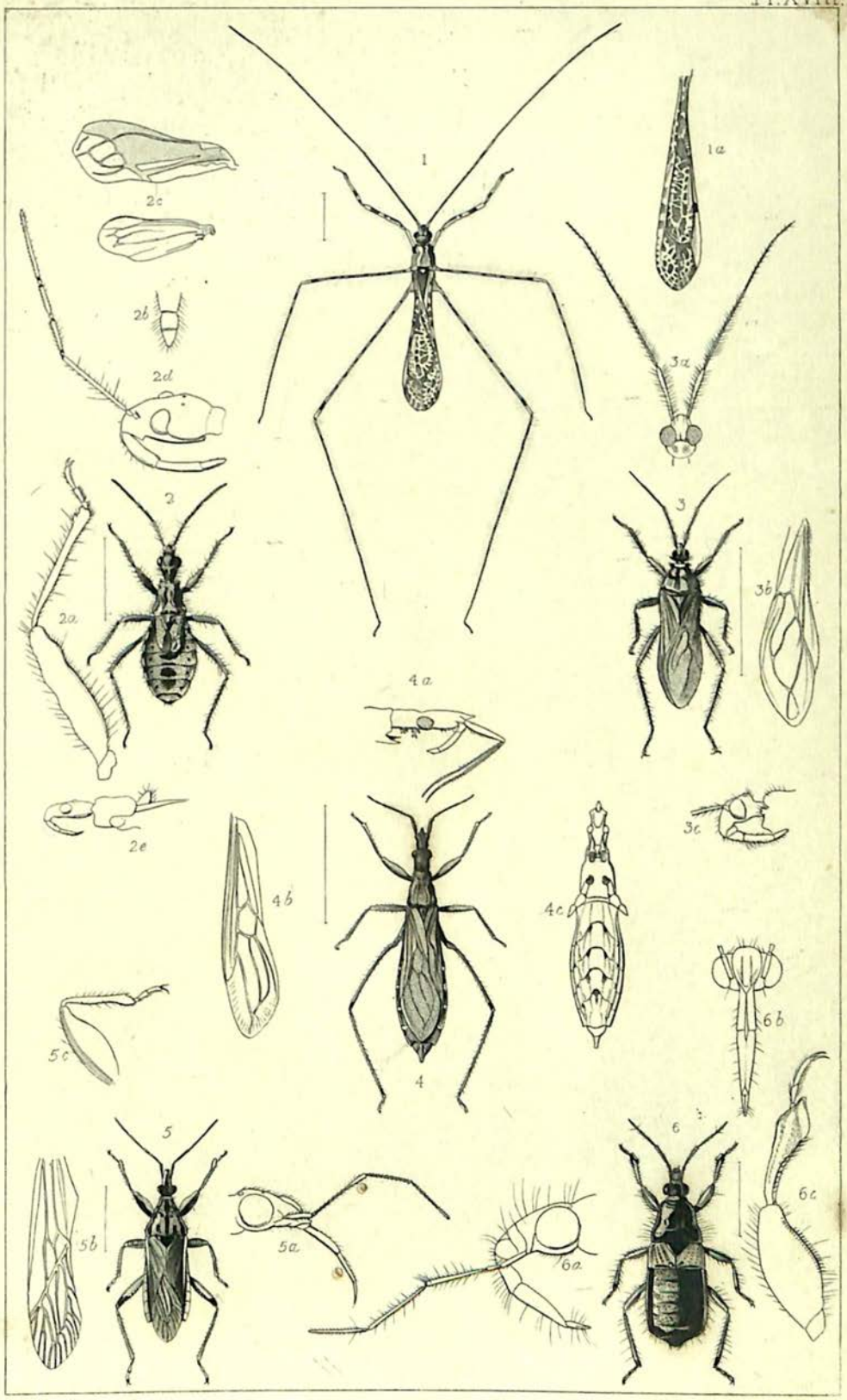

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PLATE 19.

HYDRODROMICA.

SECTION 1.—*HYDROMETRINA.*

FAMILY 1.—HYDROMETRIDÆ.

Genus 1. HYDROMETRA (p. 557). Fig. 1, *H. gibbifera* (p. 564); 1*a*, head in profile and antenna; 1*b*, fore leg; 1*c*, labrum; 1*d**, underside, ♀; 1*d**♂, genital segments, ♂ underside; 1*d*♂, idem ♂, side view; 1*d*, idem ♀, side view.

FAMILY 2.—VELIIDÆ.

Genus 1. VELIA (p. 569). Fig. 2, *V. currens* (p. 571); 2*a*, head in profile and antenna; 2*b*, fore leg; 2*c*, rostrum.

Genus 2. MICROVELIA (p. 573). Fig. 3♂, *M. pygmæa;* 3♀, apterous form; 3*a*, head in profile and antenna; 3*b*, rostrum; 3*c*, hind leg; 3*d*, fore tarsus.

SECTION 2.—*LIMNOBATINA.*

FAMILY 1.—LIMNOBATIDÆ.

Genus 1. LIMNOBATES (p. 575). Fig. 7, *L. stagnorum* (p. 576); 7*a*, head in profile and antenna; 7*b*, head seen from above.

GEODROMICA.

SECTION 7.—*HEBRINA.*

FAMILY 1.—HEBRIDÆ.

Genus 1. HEBRUS (p. 265). Fig. 4, *H. pusillus* (p. 266); 4*a*, antenna; 4*b*, elytron.

AQUATILIA.

SECTION 1.—*APHELOCHIRINA.*

FAMILY 1.—APHELOCHIRIDÆ.

Genus 1. APHELOCHEIRUS (p. 577). Fig. 5, *A. æstivalis* (p. 578); 5*a*, antenna; 5*b*, fore leg.

SECTION 2.—*NAUCORINA.*

FAMILY 1.—NAUCORIDÆ.

Genus 1. NAUCORIS (p. 579). Fig. 6, *N. cimicoides* (p. 580); 6*a*, antenna; 6*b*, head in profile; 6*a*, labrum and rostrum; 6♂, genital segments ♀; 6♀ genital segments ♂.

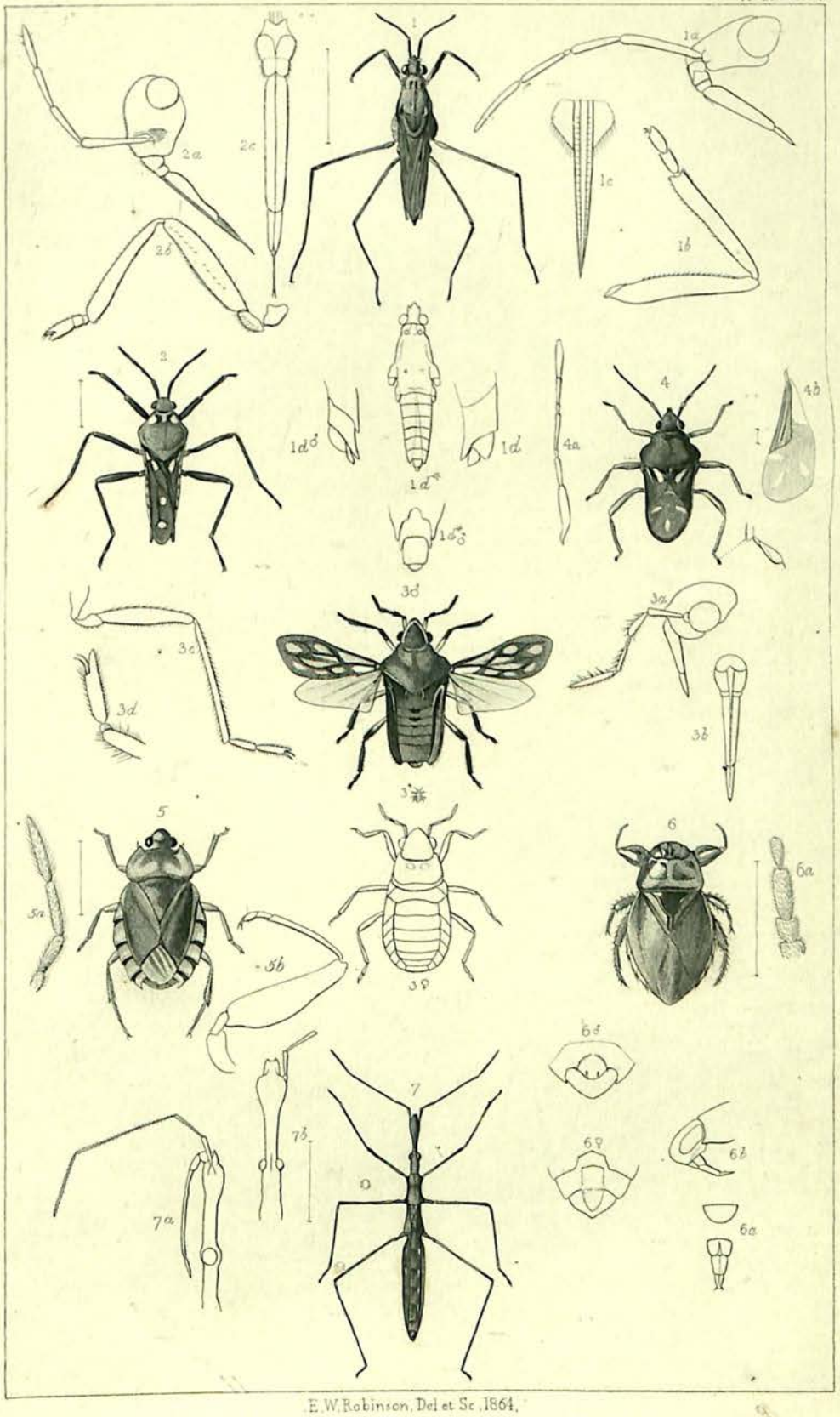

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PLATE 20.

SECTION 3.—*NEPINA.*

FAMILY 1.—RANATRIDÆ.

Genus 1. RANATRA (p. 581). Fig. 2, *R. linearis* (p. 582); 2*a*, antenna; 2*b*, head in profile; 2*c*, fore leg.

FAMILY 2.—NEPIDÆ.

Genus 1. NEPA (p. 583). Fig. 1, *N. cinerea* (p. 584); 1*a*, head in profile; 1*b*, underside; 1*c*, antenna; 1*d*, head and rostrum in front; 1*e*, rostrum with the setæ exserted; 1*f*, fore leg.

SECTION 4.—*NOTONECTINA.*

FAMILY 1.—NOTONECTIDÆ.

Genus 1. NOTONECTA (p. 585). Fig. 4, *N. glauca* (p. 587); 4*a*, underside; 4*b*, rostrum; 4*c*, antenna; 4*d*, fore leg; 4*e*, middle leg; 4*f*, hind leg.

FAMILY 2.—PLEIDÆ.

Genus 1. PLEA (p. 590). Fig. 3, *P. minutissima* (p. 591). (*See also* Pl. 21.)

SECTION 5.—*CORIXINA.*

FAMILY 1.—CORIXIDÆ.

Genus 1. CORIXA (p. 591). Fig. 5, *C. Geoffroyi* (p. 593); 5*a*, underside ♀; 5*b**, head in profile; 5*c*, antenna; 5*d*, pala ♂, side view; 5*e*, pala ♀, side view; 5*f*, hind leg. (*See also* Pl. 21.)

Genus 2. CYMATIA (p. 613). (See Pl. 21).

FAMILY 2.—SIGARIDÆ.

Genus 1. SIGARA (p. 615). Fig. 6, *S. minutissima* (p. 616); 6*a*, pala ♂; 6*b*, pala ♀; 6*c* and 6*d*, antenna.

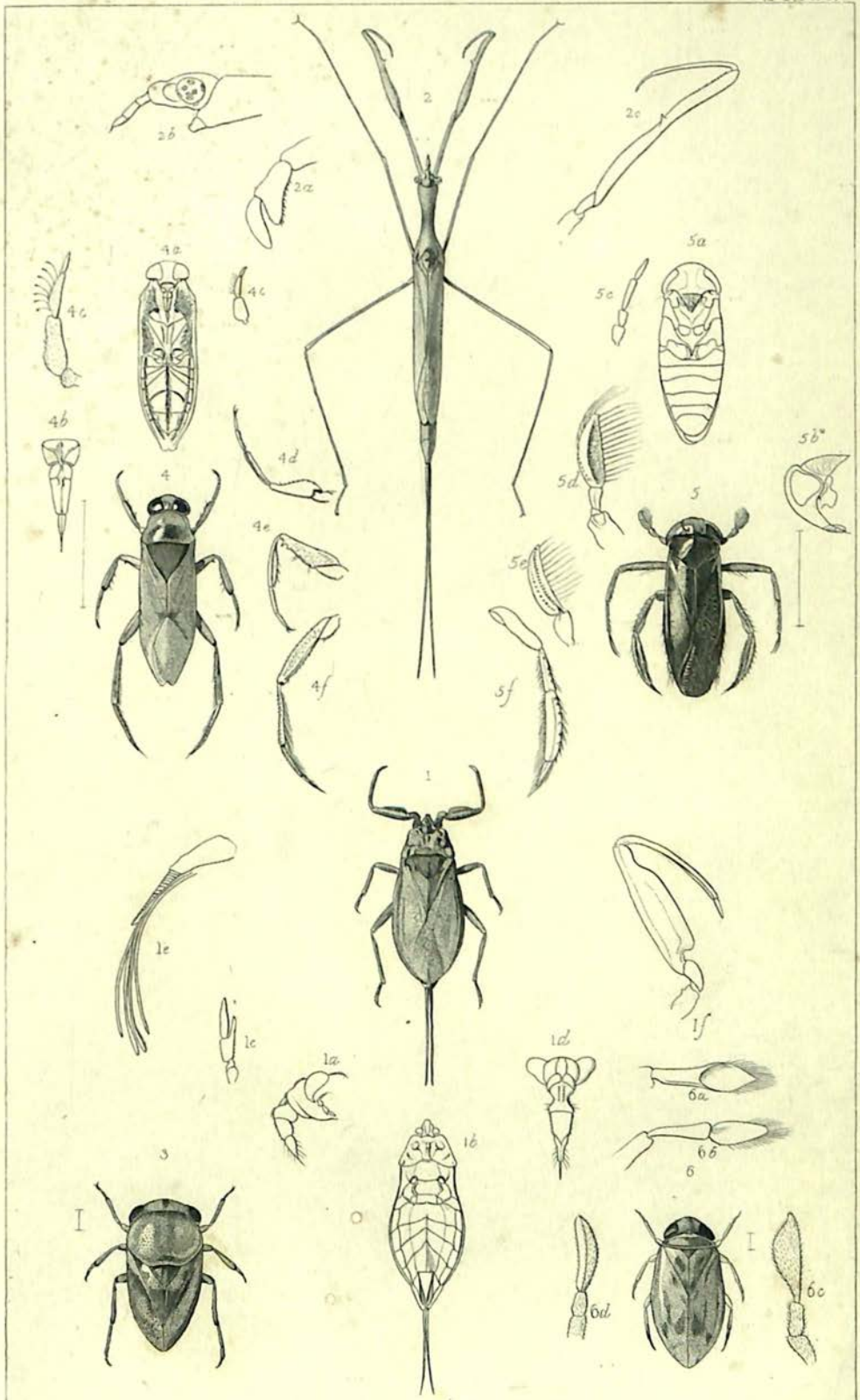

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PLATE 21.

SECTION 9.—*CAPSINA* (*continued*).

FAMILY 11.—ONCOTYLIDÆ (*continued*).

Genus 3. AMBLYTYLUS (p. 388). Fig. 3, *A. affinis* (p. 389).

FAMILY 19.—HALTICOCORIDÆ.

Genus 1. HALTICOCORIS (p. 478). Fig. 1, *H. luteicollis* (p. 480).

FAMILY 20.—STIPHROSOMIDÆ.

Genus 1. STIPHROSOMA (p. 481). Fig. 2, *S. leucocephala* (p. 482).

SECTION 10.—*ANTHOCORINA* (*continued*).

FAMILY 2.—ANTHOCORIDÆ (*continued*).

Genus 7. BRACHYSTELES (p. 505). Fig. 4, *B. pilicornis* (p. 506). (*See also* Pl. 17, fig. 4.)

FAMILY 4.—CERATOCOMBIDÆ (*continued*).

Genus 1. CERATOCOMBUS (p. 513). Fig. 5, *C. muscorum* (p. 514); 5*a*, head in profile; 5*b*, elytron; 5*c*, hinder tibia and tarsus; 5*d*, tarsus.

AQUATILIA.

SECTION 5.—*CORIXINA* (*continued*).

FAMILY.—CORIXIDÆ (*continued*).

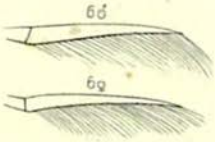
Genus 2. CYMATIA (p. 613). Fig. 6, *C. Borsdorffii* (p. 613); 6♂, pala ♂; 6♀, pala ♀.

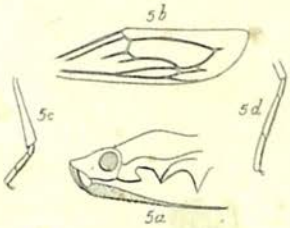
Genus 1. CORIXA (p. 591) *continued.* Fig. 7, *C. Geoffroyi* (p. 593) underside ♂. (*See also* Pl. 20, fig. 5.)

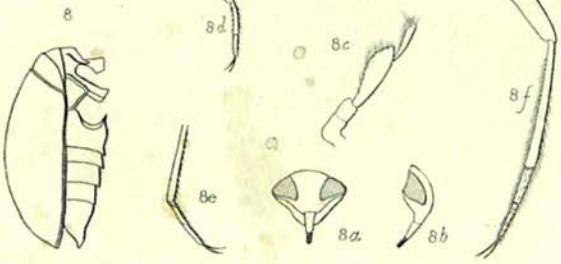
SECTION 4.—*NOTONECTINA.*

FAMILY 2.—PLEIDÆ (*continued*).

Genus 1. PLEA (p. 590) *continued.* Fig. 8, *P. minutissima* (p. 591), side view; 8*, underside; 8*a*, head in front; 8*b*, head in profile; 8*c*, antenna; 8*d*, tibia and tarsus; 8*e*, hinder tarsus; 8*f*, hinder leg. (*See also* Pl. 20, fig. 3.)







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